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ANEMONE PATENS.*

AMERICAN PULSATILLA.

OFFICINAL PART. — The flowering herb of Anemone patens *Linn.*, var. Nuttalliana *Gray* (U. S. P., 1880). Natural Order Ranunculaceæ, Tribe, Anemoneæ.

COMMON NAMES.—In botanical works the plant is called Pasque-flower, derived from the European species, which flowers at Easter.

If it comes into general use as a medicine, the name American Pulsatilla will most probably be that under which it will be known commercially.

BOTANICAL DESCRIPTION.—Anemone patens is a very conspicuous flower in early spring, found in prairie regions of Illinois, thence west to the Rocky Mountains, and northwest. The stem rises about four inches out of the ground, and is terminated by a large, erect, solitary, light bluish-purple flower. Below the flower, encircling the stem, is a many-parted floral leaf, covered with silky hairs, as are all parts of the plant. The true leaves are not expanded at flowering time, but are afterwards developed from the root of the plant, and are palmately divided into many linear lobes.

The fruit is a head of achenes, with long silky tails. It is borne on a stalk which is greatly elongated after the plant has flowered.

BOTANICAL HISTORY AND SYNONYMS. —The plant was first described as Clematis hirsutissima by Pursh (1814), from a specimen collected by Lewis and Clark while on their Western expedition. Nuttall, in 1818, transferred it to the genus Anemone, where it properly belongs, and named it Anemone Ludoviciana, which name was changed by De Candolle, shortly afterwards, to Anemone Nuttalliana. The plant belongs to the section Pulsatilla of the genus Anemone, distinguished by having the achenes prolonged into hairy tails; and by many botanists this is considered a distinct genus. Sprengel adopted this view of the subject, and called the plant Pulsatilla Nuttalliana (1825).

Anemone patens (the typical species) is found in Siberia, and was discovered in British America by Hooker, and included in his Flora Boreali-Americana. For some years the variety (Nuttalliana) was not distinguished from the plant collected by Hooker, and was accordingly called Anemone patens in Torrey and Gray's Flora, and Pulsatilla patens in Gray's Genera. It is only in late years that the plant has been recognized as a distinct variety, and it was named Anemone patens var. Nuttalliana, by Gray, in his Manual, fifth edition (1867).

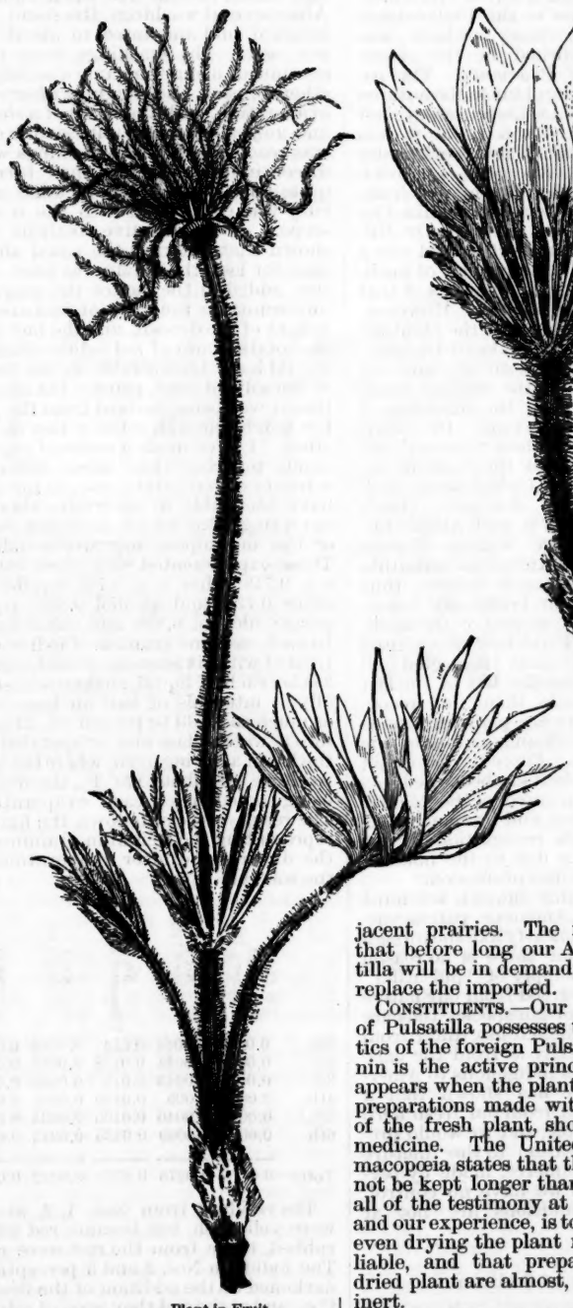
ALLIED SPECIES. — Anemone alpina *Linn.* is the only other native species of the section Pulsatilla. It can be readily distinguished by the involucre consisting of three distinct, petioled eaves, in consequence of which it was considered a distinct section (Preonanthus) of the genus, by De Candolle.

It is found in the Rocky Mountains, extending north into British America, and is also found in many different varieties in the mountains of Europe.

CHARACTERISTICS.—All parts of fresh Anemone patens are acrid and very irritating. Dr. W. H. Miller informs us that his hands have been badly blistered, in consequence of the juice having spattered over them while pressing the plant. The vapors evolved from the fresh juice are of such an acrid nature as to have inflamed the eyes, and have closed them temporarily. For this reason, persons refuse to work with the fresh herb, and botanists have been known to severely irritate their hands simply from contact with the recent plant.

COMMERCIAL HISTORY.—To Dr. W. H. Miller, of St. Paul, Minn., and his sons, is due the credit of having introduced American pulsatilla. The only demand for the plant, at present, is from Homœopathic physicians; and hence we find that pharmacists generally have no acquaintance with such a drug or its preparations. The wholesale druggists of St. Paul, Minn., and of Fon du Lac, Wis., inform us that they have no demand for it. Since the Northwestern prairies must supply the plant, it is reasonable to suppose that the prominent houses of the cities we have named would receive orders for American pulsatilla, if it were in any way a commercial drug.

A prominent homœopathic firm of New York writes us that, in consequence of the readiness with which it decomposes, they have the plant carefully tinctured in their branch house of the Northwest. In Chicago, it can easily be obtained fresh from the adjacent prairies. The indications are that before long our American pulsatilla will be in demand, and doubtless replace the imported.



Plant in Fruit.

Flowering Plant.

CONSTITUENTS.—Our native species of Pulsatilla possesses the characteristics of the foreign Pulsatillas. Anemonin is the active principle, and it disappears when the plant is dried. Only preparations made without heat, and of the fresh plant, should be used in medicine. The United States Pharmacopœia states that the plant should not be kept longer than one year; but all of the testimony at our command, and our experience, is to the effect that even drying the plant renders it unreliable, and that preparations of the dried plant are almost, if not entirely, inert.

MEDICAL HISTORY.—Anemone patens was the chief medicinal plant of the Minnesota tribe of Indians. They considered it a "cure-all," and valued it highly, and it was by their recommendation that the plant was brought to the notice of Dr. W. H. Miller.

The first recorded recognition that we can find of American pulsatilla, is a note in Griffith's Medical Botany (1847), which was followed by a recommendation from Dr. Clapp, in his account of the medical plants of

* From "Drugs and Medicines of North America." By J. U. and C. G. Lloyd (vol. I., No. 1), Cincinnati, 1884. Condensed from the original, and published by permission of the authors.

the United States (1850), and by Dr. John King, in his Dispensatory of 1852. These seem to have been only suppositions, drawn both from the relationships which exist between this plant and the European Pulsatillas, and their similar acrid properties. At any rate, these authors bring no evidence to indicate a personal experience with the plant, and produce no reference to show that others had employed it.

About the year 1854, Dr. W. H. Miller, of St. Paul, Minn., was induced to experiment with the plant by an Indian who informed Dr. Miller that it was the "great medicine" of the Northwestern tribes of Indians. At that time the plant grew in abundance over where is now the city of St. Paul, and Dr. Miller has used it in his practice from that date. In 1862, Dr. A. W. Miller, the son of Dr. W. H. Miller, presented a thesis to the Philadelphia College of Pharmacy, which was afterwards published in the *American Journal of Pharmacy*. This paper introduced the plant to the authors of the United States Dispensatory, and n the twelfth edition (1865) it was briefly considered in that work under Nuttall's name, Anemone Ludoviciana, which was the term by which the plant was known to and recognized by the Messrs. Miller. Although Dr. Miller valued the plant highly, and was a member of the Regular school of medicine, we cannot find that others of that section have taken hold of it. However, these statements brought the plant before Professor E. M. Hale, of Chicago, who experimented with it, and by means of a paper in the *Medical Investigator* brought it to the attention of homœopathic physicians. Dr. Burt, of Lincoln, Illinois, then "proved" the drug, and published the result of his observations in the *United States Medical and Surgical Journal*. Hale's New Remedies (1875), and Allen's Encyclopedia of Pure Materia Medica (1878), gave our American pulsatilla extended and favorable notices, thus bringing the plant creditably before the homœopathic section of the medical profession. Until 1882, the United States Pharmacopœia neglected all varieties of pulsatilla, but in the last revision introduced them, and recognized our American plant Anemone patens var. Nuttalliana, as one of the officinal species. There is no doubt that while this plant has been used successfully by one member of the Regular school of medicine, and by some Eclectic physicians, its recognition by our Pharmacopœia is due to the homœopathic branch of the profession.

In reviewing this subject, we must admit that our Anemone patens var. Nuttalliana is so nearly like the foreign allied species that there is no reason that the future supply of "pulsatilla" should not be derived from our native plant. The European species that are collected for medicinal use, differ from each other as widely as from the variety of the species indigenous to America. Experience has shown that a tincture prepared from our fresh herb is perfectly reliable, and we would prefer such a preparation to the tincture of European commerce, made by persons over whom we have no control, and whose reputations are not at stake.*

Nitrite of Sodium.

According to Ringer and Murell, nitrite of sodium is poisonous. Since the commercial nitrite is usually contaminated with about ⅓ of its weight of nitrate of sodium, and any given dose of the nitrite, therefore, only contains ⅓ of the pure salt, it would be dangerous to substitute the pure nitrite at the same dose.—*Rundschau.*

* The Medical Properties and Uses, which follow next in the original, are here omitted.

[Original Communication.]

THE SEPARATION OF MERCURIC FROM MERCUROUS IODIDE.

BY H. MACLAGAN.

According to most authorities, the separation of these two salts is a very easy and simple matter, the process being to treat the powder with certain solvents, such as alcohol, ether, etc., which are supposed to dissolve out the red without action on the other.

I have lately had to perform some analytical work in this line, and was at first considerably puzzled at the singular results obtained. A sample of mercurous iodide, which was believed to be pure or nearly so, was washed with ether, s. g. 0.725, and the liquid, on evaporation, left a yellowish residue, which became red when rubbed. After several washings, the result was weighed, and amounted to about one per cent. The washings were then continued, using the same quantity of ether for each, and weighing after each evaporation, with the result of a *steady* and *uniform* increase until six per cent was reached, when the washings were discontinued. The salt had become quite dark-colored, and metallic mercury was easily seen with the microscope. A quantitative analysis had shown that, making the usual allowance for loss, the iodide was pure, and this, added to the fact of the singular uniformity in the ratio of increase in weight of the deposit, and the fact that the total amount of red iodide obtained should have been soluble in one-tenth of the solvent used, pointed out clearly that it was being derived from the yellow iodide through some action of the ether. I have made a series of experiments to prove this, using different solvents of red iodide, and, as far as I have been able to ascertain, there is not a single one which does not more or less decompose mercurous iodide. Those experimented with were ether, s. g. 0.718; ether, s. g. 0.725 (Squibb's); ether 0.725, and alcohol 0.820, equal parts; alcohol 0.820, and chloroform. In each case one gramme of iodide was treated with six successive washings of 25 C.c. each of liquid, shaken occasionally at intervals of half an hour, and as much as could be poured off, filtered into a watch-glass and evaporated on the top of a drying oven, where the temperature was about 120° F., the weight being noted after each evaporation. The results were as follows, the figures representing the weight in grammes of the dry residue after evaporation of the solvent:

	No. 1. Ether 0.718.	No. 2. Ether 0.725.	No. 3. Ether and Alcohol.	No. 4. Alcohol 0.820.	No. 5. Chloroform.
1st.	0.0029	0.0044	0.014	0.0046	0.0007
2d.	0.0029	0.0044	0.0118	0.0045	0.0007
3d.	0.0026	0.0043	0.011	0.0044	0.0007
4th.	0.0034	0.005	0.0129	0.0031	0.0009
5th.	0.0028	0.0046	0.0105	0.0934	0.0009
6th.	0.0029	0.0049	0.0135	0.0042	0.0007
Total	0.0175	0.0276	0.0737	0.0242	0.0046

The residues from Nos. 1, 2, and 5 were yellowish, but became red when rubbed, those from the rest were red. The iodide in Nos. 2 and 3 perceptibly darkened on the addition of the first 25 C.c., and at the end they were of a dirty greenish color; the other three were only slightly discolored. The residues on the glasses were then treated each with its original solvent, to ascertain about the quantity necessary for solution.

No. 1 dissolved in 13 C.c., No. 2 in 10 C.c., No. 3 in 10 C.c., No. 4 in 6 C.c., No. 5 in 10 C.c. Thus showing that had the red existed primarily in the salt, it should almost all have been obtained in the first washing. For additional proof of this, two per cent of red iodide was added to the same salt previously used, and one gramme of the mixture treated with 25 C.c. of chloroform; the result was 0.0185, and a second 25 C.c. yielded 0.003. Next, one gramme of iodide was shaken as before with 30 C.c. of ether, s. g. 0.725, the ether filtered into a second bottle containing one gramme of iodide, and shaken from this into a third, then into a fourth, and finally into a watch-glass and evaporated (30 C.c. was used here, so as to have about 25 C.c. for the last gramme). The deposit weighed 0.0049, the same as obtained previously from only one gramme, and the salt in the first bottle darkened, while the other three were unchanged. One *decigramme only* of iodide yielded by treatment with the same ether 0.0047, and the residual salt in the bottle was treated with a large quantity of ether, the dark-colored sediment collected on a filter and dried, a globule of mercury resulting.

The iodide used in these experiments was made by double decomposition of mercurous nitrate and potassium iodide, and fulfilled all the requirements of the U. S. P. An analysis of it showed

Hg 607	theory	Hg 611		
I 386	requiring	I 389		

Iodide made in the officinal way gave precisely similar results.

It seems clear from these facts that there is some principle in these solvents (probably the same in all, as they are closely related) which decomposes mercurous iodide, and, therefore, while sufficient for ordinary purposes in separating the two iodides, they cannot be used for analytical work without making proper allowance, and this allowance must probably be determined in each case. As indicated, chloroform is to be preferred, and of that, 25 C.c. will dissolve about 20 milligrammes of mercuric iodide.

Chloride of Zinc Pencils and Paste.

The usual chloride of zinc pencils, produced by casting the salt in moulds, are generally found to be too hard, and to act too energetically upon the tissues into which they are inserted. Dr. Vulpius, therefore, recommends to dilute the mass with flour. He recommends to triturate 10 gm. (160 grains), each, of chloride of zinc and of wheat flour, without water, until a certain degree of plasticity has been reached, after which the mass is quickly transferred to a plate of glass covered with wheat flour, and rapidly moulded by hand to a disk of about 7 C.m. (2¾ inches) diameter. This disk is then cut radially into 16 segments, which are put into a drying oven for about six hours, when they are put into small vials securely stoppered, and rendered air-tight with paraffin.

These pencils are moderately flexible, and only slowly deliquescent; they have enough stiffness to allow being pushed into carcinomatous tissues. By age, however, they become less soluble, owing to a progressive action of the chloride of zinc upon the starch.

A diluted and plastic paste of chloride of zinc may be obtained by mixing equal parts of chloride of zinc with white bole, under cautious addition of a little water, and a sufficient amount of glycerin. Paste or pencils made of this last-named mass may be readily made in a short time, when called for, while those made with flour require some degree of experience, and need to be dried with heat.—After *Pharm. Centralh.*

Sozodont, according to the *Pharm. Rundschau*, consists of Venetian soap and Glycerin, each 60 parts; Alcohol, 200 parts; Water, 120 parts; Oil of Peppermint, 16 parts; Oil of Anise, 8 parts; Oil of Cinnamon, 4 parts; and Oil of Cloves, 1 part.

NOTES ON PHARMACEUTICAL APPARATUS.*

Some years ago, Mr. Ince (I believe it was Mr. Ince) wrote thus, or to this effect: "I have a good deal of faith in a man and a pan, provided the one has brains and the other has capacity." These words forcibly conveyed to my mind that, in the opinion of the writer, a man of good average intelligence, with simple apparatus, sufficiently large for his purpose, could accomplish much in the way of manufacturing pharmaceutical preparations, and I think there can be little doubt that a pharmaceutical sermon, having "a man and a pan" for a text, could, in able hands, be rendered both interesting and instructive.

As a busy man, having my time pretty fully occupied with the duties of my calling, I merely propose to bring before you this evening some ideas concerning, and description of, a few simple but useful forms of pharmaceutical apparatus. I do so under the following circumstances:

Last year, a friend from South America, when visiting Liverpool, desired to see our laboratory, about which he had probably formed some exalted notions; but on being shown the very modest equipment, after some conversation, he said:

"If so much practical work can be accomplished by such simple means, send me some similar things, such as your experience suggests as being necessary and useful to commence with for a small laboratory, and to which I can add as occasion requires." The work (except percolators, retorts, and minor matters) was, with rough drawings, placed in the hands of Messrs. Thomas Rider & Co., engineers, of Manchester, and was by them executed in a highly satisfactory manner. . . . I must mention that our friend had already a high-pressure boiler working an engine and other machinery, and we had, therefore, to start with a reducing valve.

This valve is made of gun-metal, and is so arranged in the steam supply-main that it reduces the pressure therein from the actual pressure of the boiler, say sixty pounds, to two or more pounds per square inch, as may be desired.

The steam entering at A, and acting equally on the two valve-faces B and C, it will be seen there would be no passage but for the lever, which is weighted in such a manner as to allow just sufficient steam to pass through to produce the lower pressure and temperature. To the small union connection marked D is attached a brass tube to convey away any moisture from the upper chamber, which may accumulate by the condensation of steam as it is passing through the valve, and it also serves to prevent the possibility of a vacuum being formed which would hold the valves in check, and prevent them from working freely.

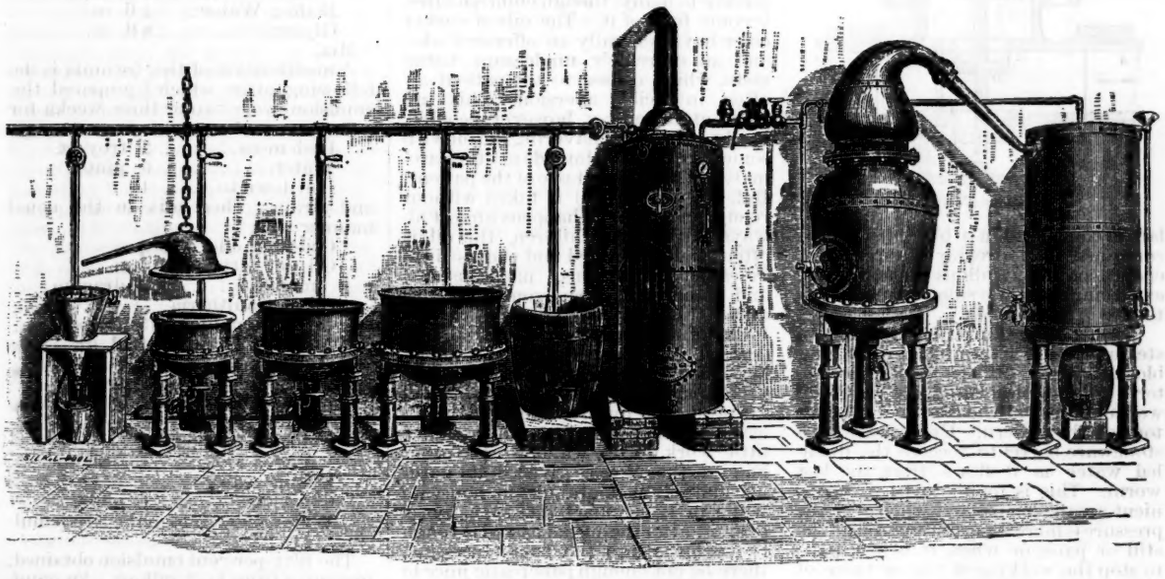
As most pharmacists would provide a boiler specially for working such apparatus as I am about to describe, let me say a few words about boilers, the choice of one being a matter of some importance. Our own is small, upright, tubular, four and one-half feet high by twenty-six inches diameter; it stands on nine inches of brick-work, occupies but little space in the laboratory. An iron pipe, covered with felt to lessen condensation, runs from it around two walls of the building to supply steam to stills, pans, funnels, etc.

To have a boiler too small for the purposes required is a decided mistake; it is better to err in the opposite direction, as any one with experience in these matters will know how trying it is to run short of steam when two or three preparations are in hand and a lot of evaporation has to be done. There is, of course, a limit in size, beyond which it is not desirable to go, first, on account of space, and secondly, on the score of economy in time and fuel; for, if a much larger boiler is used than is really required, there is so much more water to be heated each morning at the expense of these two items.

Boilers are usually described as of one or more horse-power, and to obtain this unit in the most simple form the following conditions are necessary, viz., one square foot of fire-grate and one square yard of heating surface; these, with an expenditure of fourteen pounds of coal, evaporate one cubic foot, or rather more than six gallons of water per hour, which, in the form of steam applied to a Boulten-Watt engine, would perform the work of one horse for that period of time. A two-horse boiler is sufficiently large, where machinery is not used, and an upright, tubular one is the best for getting up steam quickly. In this, coke should be used in preference to coal, as the latter is liable to choke the tubes with soot very readily. Although it should be tested to bear a pressure of at least one hundred pounds to the square inch, not one-tenth this amount is generally used for pharmaceutical purposes.

With a low-pressure boiler, then, a reducing valve is not required, and the steam is taken direct from it to the point at which it has to be used, merely interposing a screw stop-valve on the main, which in such position is better than an ordinary tap, as it affords a more convenient means of regulating the supply. In the arrangement shown, a tub, three pans, and a funnel are placed on one side of the boiler; a still and condenser on the other side. Into the tub passes a block-tin pipe, terminating on the bottom in a flat, perforated coil, a short distance above which rests a perforated false bottom, such an arrangement being convenient for steaming and boiling purposes where the ingredients are bulky, as in the case of decoctum sarzæ comp., etc.

The pans are of copper, jacketed with cast-iron, leaving a steam cavity over the lower part only. This provides a sufficient heating surface for rapid evaporation, and avoids, to some extent, the inconvenience and possible deterioration of the product caused by the drying, which always occurs on the outer edge of the liquid when it comes in contact with the sides of the pan, when it is jacketed to the top. Constant stirring will, of course, obviate this to some extent, but even with this and the old arrangement, it is not easy to remove the difficulty.



Symes' Pharmaceutical Apparatus.

The capacities are forty, twenty, and ten gallons, and the internal measurements, 30x24, 24x20, and 18x17 inches respectively, and such a one is fitted with a check valve or tap, vacuum valve, and a siphon pipe and back pressure valve at the outlet for waste steam; it is self-contained, requiring only the attachment of the steam supply and waste pipes, so that, if thought desirable, the relative positions could be changed with ease.

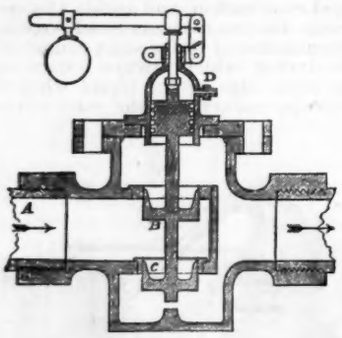
The steam-funnel is made entirely of copper, well tinned inside, and the steam chamber is continued to the top. The steam supply enters at a three-eighth-inch union near the top, makes the circuit of the chamber, and passes out at right angles to the side of the funnel, more or less condensed, near the bottom. The exit tap is somewhat large in proportion to the funnel itself, the object of so having it being to prevent any possibility of choking up, and to provide a good exit for any thick or partly solid filtrate. The interior of the funnel is fitted with a tinned wire cage work, which can be removed at will, its obvious use being to prevent the filtering material from touching

* Read by Charles Symes, Ph.D., at a meeting of the Liverpool Chemists' Association. Reprinted from the Pharm. Journal of March 29th, 1884.

the sides of the funnel, and for preserving a clear passage for the filtrate in all directions, whilst the support given is practically equal to that given by a solid surface. Near the top is placed a small safety valve which is regulated to blow off at five pounds pressure.

The main steam-pipe, if not required for drying closet, should terminate in this direction with a T-piece, fitted with screw-tap and hose connection so that a rubber tube can be attached when desired; it is useful for many purposes, one example is steaming nux-vomica beans before grinding.

The still is placed on the opposite side of the boiler; it is of copper with a cast-iron jacket similar to those on the pans, and has fittings like them. In the body of the still is a gun-metal hand-hole for removing any solid residue and for cleaning-out purposes. It is also fitted with a removable, perforated false bottom for separating any solid matter from the liquid contents drawn off by the tap underneath. The distil-



Reducing Valve.

late is condensed in a block-tin worm contained in a circular wrought-iron cistern of sixty gallons capacity, the exit being from the side near the bottom.

Passing direct from the boiler is a steam-pipe which terminates in another block-tin worm at the top of the cistern, going within the coil of the other worm and out at the centre of the bottom of the cistern. Underneath is a stoneware barrel to receive the distilled water as it flows from the last worm. This is found to be a convenient arrangement, and when ever the pressure is increasing unduly rou nd the still or pans, or when it is necessary to stop the working of one or more of these, then the distilled water-tap can be turned on, with the result that one has a good supply of distilled water, practically free of cost.

Back-Pressure Valve.

It has been mentioned that each pan is fitted with a siphon-pipe and back-pressure valve. The former prevents waste of steam and consequent power; a foot of condensed water in the pipe would represent, approximately, half a pound of steam pressure. The latter prevents the waste steam from one pan from entering the chamber of the next, replacing a tap, and acting automatically. It is exceedingly simple, as will be seen from the drawing. The arrows indicate the direction in which the steam (or condensed water) passes, lifting the small valve in the centre and moving forward freely; but if it attempts to pass in the opposite direction, the more tightly the valve is closed against it. The apparatus described does not by any means constitute the equipment of a pharmaceutical laboratory, but it forms some of the essentials for every-day work, and a foundation on which to build. The capabilities are but moderate, still the expense is moderate also. The cost, exclusive of main supply and waste steam pipes, the tub and stone barrel, is £110. A two-horse, upright, tubular boiler costs £28 or £30, so that the whole could be fitted up for something like £150. The still, pans, and funnel are tested by hydraulic pressure to bear 20 pounds on each square inch of surface.

Doubtless, different pharmacists work their apparatus at different degrees of pressure. My experience is that with pans of the size mentioned, a pressure of from 2 pounds to 5 pounds to the square inch, giving a temperature of from 216° to 225½° F., is the most suitable when stirring is actively continued, and when not stirring, a nominal pressure, say of ½ pound to the square inch is quite ample.

[Original Communication.]

COD-LIVER OIL AND ITS EMULSIONS.

BY REINHARD LUCKE, PH.G.*

A PREJUDICE exists against cod-liver oil on account of its taste, which is repulsive to many, though children often become fond of it. The oils of darker color have generally an offensive odor and an extremely unpleasant harsh taste, which causes to the patient an often invincible aversion. This unpleasant taste may, however, be effectually covered by flavoring the oil with some oil of bitter almonds or other aromatic oil, to suit the taste of the patient. But, even if the oil is taken without repugnance, which happens almost always with small children, the oil is often badly digested and causes disagreeable eructations, nauseousness, and sometimes even vomiting. To avoid this, the oil is given in the form of emulsion, that is, so subdivided and suspended in a mucilaginous liquid as to be almost ready for absorption by the villi of the small intestine, and by the lacteals, so as to leave to the pancreatic juice very little work to do, while, on the other hand, if the oil were given in its natural state, it is more apt to nauseate while in the stomach and then, moreover, if, after the oil had passed through the pylorus into the small intestine, there be not enough pancreatic juice to convert the oil into chyle, as the emulsion produced by the action of the pancreatic juice on oils and fats is called, the above-mentioned symptoms of incomplete digestion would be more likely to occur. From this I would infer that cod-liver oil is best given in the form of emulsion. But the opinions of many physicians differ on this point, some think the oil is best taken in its pure state, as the pancreatic juice would be perfectly able to take care of the oil itself; while others prefer to give it in the form of an emulsion, of which there are various modes of preparation.

Small quantities of emulsions of cod-liver oil, as well as all other fixed oils, may be prepared by rubbing in a mortar five parts (by weight) of the oil with two parts (by weight) of acacia and then adding at once five parts (by weight) of water.

This is, I think, the best way of making an emulsion in small quantity, such as generally ordered by the physician, as it is the quickest, and I never knew it to fail. However, emulsions of cod-liver oil, mostly combined with the hypophosphites of calcium and sodium, have become an article of trade, and large quantities are sold in the States, and other methods of preparing emulsion of cod-liver oil have been resorted to by most pharmacists.

Of the various ways of accomplishing this with which I made myself acquainted, is one to make it with mucilage of salep, prepared by infusing powdered salep with cold water; another is to make it with yolk of eggs, or with mucilage of tragacanth. The method which I found most extensively used is to make it with decoction of Irish moss. A good formula, known as the College formula, for making emulsion of cod-liver oil with hypophosphites of lime and soda reads as follows:

Irish moss	6 drachms.
Water	4 pints.
Boil down to	2 "

and strain; then add

Cod-liver oil	2 "

and mix thoroughly so as to form an emulsion. Next add

Oil of Gaultheria	15 drops.
Oil of Cinnamon	15 "
Oil of Bitter Almond	20 "

Dissolved in

Alcohol	1 fl. oz.

And finally:

Hypophosphite of Calcium	4 drachms.
Hypophosphite of Sodium	4 "
Chloride of Sodium	1 drachm.
Boiling Water	4 fl. oz.
Glycerin	8 fl. oz.

Mix.

A modification of this formula is the following, after which I prepared the emulsion every two or three weeks for a year:

Irish moss	2½ troy oz.
Water	6 pints.
Boil down to	4 "

and strain. Then mix in the usual manner with

Cod-liver oil	q. s.
Oil of bitter Almonds	1 drachm.
Oil of Gaultheria	½ "
Oil of Cinnamon	15 drops.
Alcohol	4 fl. oz.
Hypophosphite of Calcium	1 troy oz.
Hyphosphite of Sodium	1 "
Chloride of Sodium	1 drachm.
Boiling water	8 fl. oz.
Glycerin	1½ pints.

Water, enough to make a 50% emulsion.

The fifty-per-cent emulsion obtained, measures from 1¾–2 gallons. An emulsion properly prepared after this formula yields a product which leaves nothing to be desired. It is a perfect emulsion, no oil globules can be detected by the naked eye; it is very fluid; it is of a milk-white color and has an agreeable flavor and it never separates: a number of bottles filled with this emulsion showed no change after having been kept in the store for nearly one year.

The main difference between the last two formulas, besides the latter being for a larger quantity, is that in one to the decoction of Irish moss a given quantity of oil is added, while in the other so much oil is gradually added with constant beating as will emulsify, which quantity is varying, owing no doubt to the varying quality of the moss employed to make the decoction. The reason for taking as much oil as will emulsify is that, by so doing, the emulsion will be more fluid than otherwise, as I found the emulsion made after the first process mentioned sometimes becomes quite jelly-like, there being more decoction of Irish moss present than was necessary to emulsify the oil. To guard against putting too much oil into the decoction, I always reserve a portion of the decoction, which I add when the oil globules can no longer be extinguished by beating with a common egg beater, which happens after having emulsified about one gallon of cod-liver oil.

* Extract from a Thesis presented to the College of Pharmacy of the City of New York, 1884.

One point has to be strictly observed in order to insure success, that is, the decoction must be well prepared. The Irish moss, after having been washed thoroughly with cold water, is put into a suitable vessel and heat is applied. The decoction is then prepared by slowly raising the temperature to the boiling point, stirring constantly to hasten the evaporation and to prevent the moss from adhering to the bottom of the vessel and so be burnt, which would tinge the decoction yellow and thereby make it unfit for use, as it would also impart a yellow color to the emulsion. I found that if the evaporation be not accelerated by much stirring it would not only easily be burnt, but it would also lose in its emulsifying power; an experiment which I made regarding this point showed that after letting the decoction boil for over an hour, it had been transformed into a thin liquid with small particles of matter floating about, and it could not be used for making emulsion.

When the decoction has carefully been evaporated down to about four pints (exact measure is not necessary), it is forcibly strained through coarse muslin into a large open vessel and then, while hot, about one or two pints of oil are added and beaten into an emulsion and afterwards more oil is added in small quantities at a time (one-half pint) till it will no longer emulsify, when a small quantity of reserved decoction is added, and the whole will then make a perfect emulsion. The aromatic oils, dissolved in the alcohol, are then added, afterwards the glycerin and at last the salts, dissolved in the boiling water, are duly incorporated with the emulsion in the tube. Then I transfer the whole to a two-gallon bottle, which is graduated, and rinse the tube with some water and pass this into the bottle, and then I add water enough to make the emulsion measure twice as much as the amount of oil used, that is, to make it a fifty-per-cent emulsion.

As I endeavored to show, my formula is not as vague as it may at the first glance appear to be, and if worked properly as explained, which requires about two hours' time, it proves to be highly satisfactory.

Vaginal Suppositories of Gelatin.

MR. AD. VOMACKA, in reply to an inquiry, gives the following instruction for making vaginal gelatin suppositories.

Take transparent gelatin, soak it over night in water, and then add to it six times its weight of glycerin. If the mass is to preserve its transparency for some time, it is necessary to remove all the water which the gelatin has absorbed, by evaporation. According to the density of the glycerin, more or less of gelatin must be used. Nearly all the usual remedies may be mixed with this mass, f. i., iodide of potassium, sulphate of zinc or copper, etc., excepting tannic acid, which forms an insoluble compound with gelatin. If tannic acid is to be applied, it is necessary to replace the gelatin by agar-agar, a Japanese vegetable gelatin, derived from an alga.* In the case of agar-agar, however, the relation of glycerin to water is different. Agar-agar does not furnish a jelly with glycerin alone, but forms a transparent mass, which is tough when heated. Hence, an addition of water is here absolutely necessary. 1 part of agar-agar is soaked over night in water, of which it takes up nearly 50 parts, 10 parts of glycerin and 20 more parts of water are then added, and the whole evaporated to the required consistence. During the fusion of the mass, stirring is to be avoided as much as possible. Ascending air-bubbles are to be removed from the surface with a stiff card-board, so as to keep the mass clear and transparent. The prescribed remedies having been added, either in form of solution or in very fine powder, the mass is then poured out into suitable forms and allowed to congeal. — *Pharm. Rundschau.*

* Japanese isinglass is prepared chiefly from *Gelidium spinosum;* Agar-agar (which is *not* identical with the former), is prepared from another alga, *Eucheuma spinosa.*—ED. A. D.

[ORIGINAL COMMUNICATION.]

A NEW REACTION FOR THYMOL OR PHENOL.

BY PROF. J. F. EYKMAN, TOKIO, JAPAN.

IF a small crystal of thymol is dissolved in about 1 cubic centimeter of glacial acetic acid, and this solution mixed with about one-fifth its volume (5 to 6 drops) of concentrated sulphuric acid, a fine blue color is produced by allowing one drop of nitric acid to flow down to the bottom of the test-tube. On shaking, the whole liquid acquires this blue color. In presence of not too small a quantity of thymol, the liquid appears dichroic, being red by transmitted, and dark-blue by reflected light.

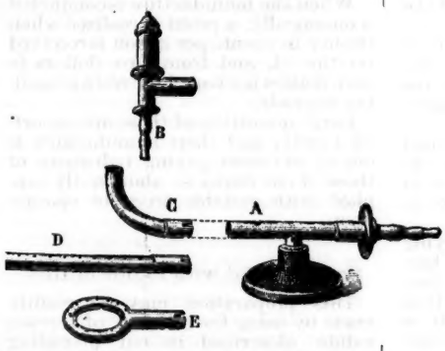
Phenol differs from thymol, in this reaction, by causing the appearance of a fine violet-red color.

Salicylic acid, menthol, camphol, and borneol give no color-reaction under the above conditions.

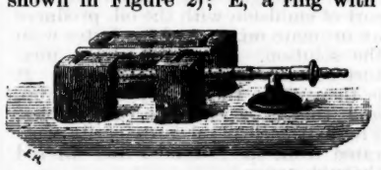
TOKIO, Feb. 4th, 1884.

MULTIPLE GAS-BURNER.

PROF. D'ARSENVAL, of the College of France, is the inventor of a burner for laboratory uses which, at a comparatively small expense, furnishes a variety of flames. Figure 1 shows the



base A, to which the various tips can be attached. B is intended for an oxyhydrogen flame, C for a Bunsen burner, D, a long tube with numerous small openings, which serves to heat a reduction-tube for organic analyses (as shown in Figure 2); E, a ring with



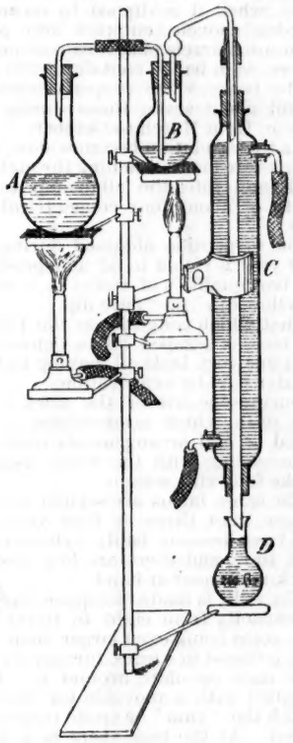
small openings adapted for evaporating dishes, sand-baths, etc. The arrangement for heating a reduction-tube recommended by the inventor consists of two bricks resting on an even surface, and provided with two suitably bent pieces of strap-iron for supporting the tube.—*La Nature.*

French Shoe Dressing.

VINEGAR, 2 pints; soft water, 1 pint; glue (fine), 4 ounces; logwood chips, 8 ounces; powdered indigo, 2 drachms; bichromate potassium, 4 drachms; tragacanth, 4 drachms; glycerin, 4 oz. Boil together, strain, and bottle.—*Scient. Am.*

APPARATUS FOR DETERMINING VOLATILE ACIDS, ETC.

THE apparatus here described has been devised and used by B. Landmann specially for the separation and estimation of acetic acid in wine, but it may also be employed for many other purposes, where a volatile liquid is to be rapidly separated. Fifty cubic centimeters of the wine or other liquid which is to be freed from volatile substances are introdueed into a flask *B*, into which 300 C.c. of water had previously been placed, and the flask connected, an one side with a condenser, and on the other with a flask containing 500 C.c. of water. The latter is raised to boiling, and the steam, passing over through the narrow connecting tube, and rapidly bubbling through the liquid in *B*, soon drives over all the volatile constituents of the wine (together with watery vapor). To prevent particles of the liquid, which might have been thrown upwards mechanically, from finding their way into the condenser, the exit tube has a globe blown upon it, and has an upward trend, before it passes into the



condenser. The operation is interrupted when 200 C.c. have collected in the receiver, which requires about 45 minutes. The original volume of wine is thereby reduced to about ¼ of its original volume, and all possibility of injury to its extractive constituents avoided.

In the case of wine, the acid of liquid caught in the receiver is titrated as acetic acid.—*Zeitsch. Anal. Chem.*, 1883, 516.

Arbutin.

ARBUTIN, the active principle of uva ursi, is a potent diuretic, and is converted by boiling with acids or under the influence of fermentation, into glucose and hydrochinon. Dr. Mensche (*Centr. f. Klin. Med.*) gives the following results of observation upon the action of the principle: 1. In many cases it has proved to be a valuable diuretic. 2. It may be given in large doses without harm. 3. It is converted into hydrochinon in human urine. The observer remarks that it has a specially beneficial action in vesical catarrh and he suggests its employment in place of uva ursi and also as a remedy for gonorrhœa, in place of injections.

[ORIGINAL COMMUNICATION.]

THE MANUFACTURE OF OIL OF TURPENTINE AND RESIN.

BY WILLARD B. SHUPTRINE, PH.G.*

IN the manufacture of oil of turpentine and resin, a convenient portion of pine land† is taken, where the necessary homes are constructed, and early in January boxing the trees commences which lasts until the last of March. All the pines over twelve inches in diameter are boxed, namely, incisions are cut near the base of tree, preferably in the south side, the boxes being about ten inches broad and made to hold from two to three pints. Some trees of larger size having from three to five boxes, according to size of trunk; oblique gutters are cut above the boxes, to convey the turpentine in as it exudes. They meet over the center of the box from each side, inclined downward. The boxes are divided into lots of 10,000 each, which is called a crop and is placed under the supervision of a man.

The exudation commences immediately and very soon the boxes are filled, when it is dipped by means of wooden shovels, emptied into pails, then into barrels placed in convenient places, each barrel containing 280 lbs.

The boxes, when properly attended to, fill about seven times during the season, from March to October.

As the exudation becomes slow, new streaks are made, reaching through the bark and into the alburnum to the depth of about four concentrical circles.

The turpentine obtained during the first year is richer in oil and produces the best qualities of resin; it is called "yellow dip" or "pure dip."

That which congeals on the face of the trees is scraped off in October; it contains very little oil, having lost the greater part by evaporation.

During the winter, the stock of oil and resin, which accumulates, is disposed of and arrangements made for commencing with the warm weather of the following season.

The same farms are seldom worked longer than three or four years, as the trees become badly exhausted in that time, and there are new trees to work upon near at hand.

The still‡ is made of copper, varying in capacity from eight to thirty barrels, some being even larger than this. It is inclosed in a brick furnace so that heat may circulate around it. It is supplied with a movable top through which the "gum" or crude turpentine is put. At the base there is a large stop cock or gateway through which the residue is drawn, after the distilling process is completed; it is also supplied with a small stop cock at top, through which the water enters. The movable top is connected with a large coil of pipe for condensing, which is immersed in a tank filled with cool water; the end of the pipe is brought through the side of the tank near the base so as to empty its contents into a barrel for that purpose: this barrel or receiver is furnished with two openings, one near the bottom, the other near the top.

A convenient quantity of turpentine is placed in the still, being very dirty, containing leaves, sticks, etc. Heat is applied and very soon the vapor begins to rise and is condensed while passing through the coil; it is emptied into the receivers. At first a greater part of it is water; the water immediately falls to the bottom because of its greater specific gravity and incompatibility; as the receiver is filled, the water is drawn out through the stopcock at base, while the lighter volatile oil is drawn from that at top and transferred to barrels.

As the distillation progresses, the quantity of water becomes small, when more is added through an opening at top of still. This process is continued until the distillate is largely water (one part of oil to twelve of water) when the fire is removed; the movable top is also taken away, and it is allowed to stand for a few minutes until most of the water passes away; then much of the straw and sticks is removed by means of strainers on long handles; after this is done, the large stop-cock is opened and the liquid resin conveyed to strainers to remove all dirt, etc. The first strainer is, of course, wire, to remove large pieces of trash, then it is passed through cotton batting made for that purpose, lastly through a strainer made of wire gauze of No. 40 to No. 60; No. 60 being used for best qualities of resin; it is then allowed to stand in large vats until it is partly cooled, when it is removed to barrels, each containing 280 lbs.

The resin from turpentine of the first year is classed "window glass" then "virgin" which are the finest qualities; the lower grades are made from "gum" of succeeding years and often by improper stilling.

The oil is put in barrels, and after being allowed to stand for a short while, deposits a sediment, mostly of suspended organic matter; this is removed, the barrels sealed up, when it is ready for market.

The oil is now comparatively pure, and in this state we find it in the stores. To further purify it, it should be distilled from caustic potassa.

When the manufacture is conducted economically, a profit is realized when twenty-five cents per gallon is received for the oil, and from two dollars to four dollars per barrel for resin according to grade.

Large quantities of these are exported yearly, and their manufacture is one of the most paying industries of those of our States so abundantly supplied with suitable trees to operate upon.

* Extract from a Thesis presented to the College of Pharmacy of the City of New York, 1884.

† The author's account refers to the pine-lands extending through the Carolinas, Georgia and Florida, over a tract of about six hundred miles in length, and one hundred miles in width. Unfortunately, a considerable portion of valuable pine-land has quite lately been destroyed by fire.

‡ Compare also the article by Dr. Thomas F. Wood, of Wilmington, N. C., in NEW REM., 1880, p. 289: "Note on Turpentine, Rosin, and Allied Products."

Cod-Liver Oil with Iodide of Iron.

THIS preparation may be readily made by using the solution of ferrous iodide (described in our preceding number, p. 67).

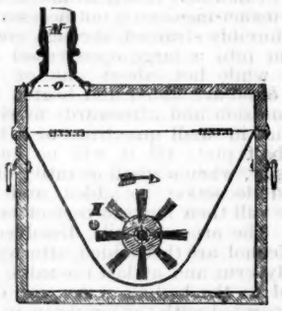
Solution of Ferrous Iodide.....	50 parts.
Cod-Liver oil, enough to make.....1,000	"

Mix the two liquids and shake vigorously. The glycerin, while forming a sort of emulsion with the oil, produces an intimate mixture of the latter with the solution. On standing, the mixture becomes clear in a short time. It is then again thoroughly shaken up, and this is repeated several times. Finally the clear oil is carefully separated from the sediment and filtered through paper.

[The author states that the product contains five centigrammes of ferrous iodide in each tablespoonful. But it seems to us that the oil will only take up a portion of the iron salt; at all events, it requires to be demonstrated that is takes up the whole of it.]—*Boll. Farm.*, 1883, 155.

Blue or Yellow Glass Bottles for Pharmaceutical Preparations.

DR. F. MOLNÁR, Apotheker, Buda-Pest, has put to spectroscopic proof the question that has been long debated, whether the blue glass bottles so constantly used in pharmacies protect their contents from the chemical action of light. He found that the blue or cobalt glass allowed to pass part of the red rays of sunlight, and all the blue and violet. The yellowish-brown bottle-glass permitted the passage of the red and orange rays only, the green, blue, and violet rays being completely stopped. A second experiment was made with chloride of silver paper. A piece of paper was taken, a third covered with cobalt glass, a third with the brown glass, a third left unprotected, and the whole exposed to the sunlight. After ten minutes it was found that the part covered by the blue glass was almost as much darkened as that left uncovered, while the discoloration had not yet begun under the brown glass. It is well known that blue, violet, and ultra-violet rays are the most active chemically, and these experiments show that the blue glass bottles now in use are best adapted for promoting chemical action in their contents. The details are published in the *Chem. and Drug.* from *Gyogyasz. Hetilap.*



APPARATUS FOR THE INHALATION OF FINE POWDERS.

FOR the purpose of facilitating the application of finely-powdered substances by way of inhalation, Joseph Hassler, of Bad Solen (near Wiesbaden), Germany, has patented the apparatus here figured.

It consists of a box containing a trough in which revolves a circular brush, the rapid turning of which causes the powder to be carried around. As each successive bunch of bristles comes in contact with the projecting pin *H*, the powder is thrown forcibly upwards and passes through the sieve *O* in form of fine dust, which may be inhaled by the patient through the mouth-piece *M*.

IMPROVEMENT IN BURETTE FLOATS.

A. GAWALOWSKI has made an important improvement in the so-called Erdmann's float which is used to facilitate reading off the marks on burettes.

[For the sake of those of our readers who are not familiar with the contrivance, we will briefly explain. In trying to ascertain the exact height at which a liquid stands in a narrow tube, such as a burette, an inexperienced person is sometimes puzzled, since the surface of the liquid forms a curve, caused by the capillary attraction of the glass, the liquid being in fact raised higher at the edge than it is at the centre. Hence, on looking vertically through the level of the liquid, a dark, semilunar line appears, which is called the *meniscus*. It is customary to regard the bottom part of this dark curve as the point from or to which the marks are read off on the burette. Erdmann proposed to obviate all difficulty by floating in the upper layer of the liquid a small glass-cylinder which should sink just far enough below the surface to clearly expose a circular mark made

upon its outside. It is from this mark and the corresponding marks on the scale of the burette that the quantity of liquid contained in or withdrawn from it is read off.]

Gawalowski now proposes to insert in the float a black strip of paper, or to paint a black ring in it, instead of merely etching or scratching a mark on the outside. A firm in Germany furnishes these floats with a black glass-cylinder fused inside.—*Chem. Centralbl.*

A still further improvement is proposed by A. Prinzl, who recommends to engrave upon the float a nonius or subdivided scale, so as to be able sharply to read off even small fractions of cubic centimeters. In this case, it will be possible often to use the more concentrated volumetric solutions, instead of highly dilute ones.—*Neueste Erfind. und Erfahr.*

Commercial Varieties of Aloes.

A WRITER in the March number of the *Chemist and Druggist* writes:

There are three kinds of aloes known to commerce, viz., the East Indian, West Indian, and Cape; and these may be subdivided into seven distinct kinds, viz., the East Indian, Socotrine and Hepatic; Zanzibar Hepatic; West Indian, Barbadoes and Curaçao; Cape, and Natal.

The greater portion of this drug is consigned direct to London, and thence distributed to all parts of the globe.

America obtains a few West Indian and Cape direct, but draws her supplies of East Indian and Zanzibar from London. The continental requirements, with the exception of West Indian, are also obtained through the London market. Each country has its own idea as to the merits of the different sorts. Thus, the United Kingdom consumes East Indian, the finer sorts of West Indian, and but few Cape; whereas the Continent monopolizes at least three-fifths of the supply of Cape, and only a small proportion of the finer descriptions. The United States, whilst taking a fair quantity of Cape, are also large buyers of fine East Indian and Zanzibar.

I found it impossible to get at the exact quantity imported into London, as I was informed the records are returned as so many packages, but my informant kindly gave me an estimate which, I was assured, was not far wrong.

Last year about 4,500 packages of all kinds were imported, which was equal to about 350 tons, being about 25 per cent more than ten years previously.

The following particulars relate to the description, packages, etc.:

East Indian (*Socotrine*) are brought over in old tin-lined spirit-cases, containing about 70 to 80 lbs. each, the substance being about similar to putty, and when of good quality are of a light-brownish color, with a fine aromatic flavor, and generally realize the highest price.

East Indian (*Hepatic*), usually imported in kegs of 100 to 150 lbs. each, are much paler than the former kind, and almost liquid, being worth from 5 to 15 per cent less than the former.

Zanzibar (*Hepatic*). — These come over in a most curious and original way —viz., in monkey-skins; and I was gratified by seeing several cases of these fine aloes also packed in saucers and plates of native make, and in tin plates, bowls, and baking dishes of the cheapest Birmingham manufacture, which, I was told, was quite an exception, and may have been caused by the present troubles in the district from whence they came. The usual package —viz., the monkey-skin—when filled with aloes, is sent from the interior of Northern Central Africa down to the coast, and there packed into second-hand Manchester cases of various sizes.

The monkey-skins vary in size considerably. Amongst a very fine parcel I noticed a skin which could not have contained more than 2 lbs. of aloes, in fact, its contents were by far less valuable than the little animal would have been, had it been sent alive to this country; whilst other skins contained some 30 to 40 lbs., or even more. It was suggested to me by a gentleman I met at the warehouse, and who was showing me these skins, that it was a pity that the natives could not find the means of making boxes; but in a country where the nail is yet unknown and the art of joinery a thing of the future, they no doubt do their best to supply the deficiency.

It has since been my pleasure to meet a gentleman who was for some time in Zanzibar, and the reason he gave for the natives using these skins was that monkeys are very plentiful, easily killed, and of such varying sizes as to suit both large and small collectors of the juice of this important plant. After all, the natives only imitate the Spaniards of a no distant date, who stored their wines in pig-skins after exactly the same fashion.

This description of aloes most resembles the socotrine; the color, however, is paler, and the flavor, if anything, finer. This kind is practicably the only sort adulterated, if I may so use the term, as some of the skins are often filled with leaves, stones, dirt, and many other substances quite foreign to the aloe plant.

Cape are packed in large heavy cases, generally lined with sheepskins (which, no doubt, are plentiful in the colony), containing about 4 cwt. When of fine quality it is a hard bright, black (brownish tinted), glossy substance, with an offensive odor, and is generally known as the horse aloe. Its value (which, of course, varies according to supply) is about one-third that of the East Indian or Zanzibar. The production of this description is equal to the whole of the other sorts combined.

Cape (*Natal*).—The quantity of this kind collected is very limited, being only a few cases per annum. Like Cape, it possesses no flavor, but becomes a pale liver in color by keeping, and, in consequence of its color, realizes about half as much again as the ordinary Cape.

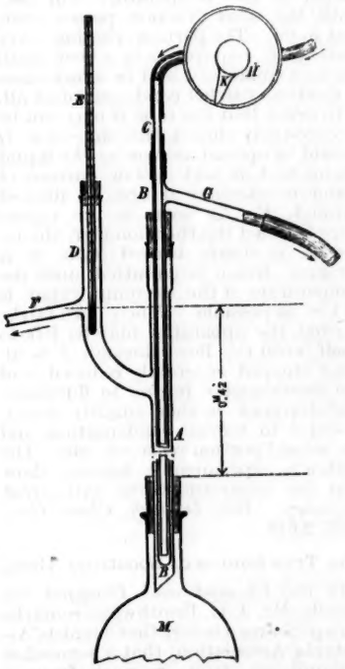
West Indian (*Barbadoes*).—This is the most important kind, at least so far as the English consumer is concerned. The quantity produced is large, say two-fifths of the whole, consisting both of fine and inferior qualities, the variation in values, I am told, being considerable, the fine bringing prices almost equivalent to East Indian, whilst common sometimes sell at less than Cape. They are packed in boxes of sixty to one hundred pounds, and in gourds of ten to fifty pounds each, resembling Cape in substance, but in color varying from a blackish brown to a pale mahogany, with an odor which is neither offensive nor aromatic, but quite peculiar to itself. There is also another distinguishing feature more noticeable in this aloe, viz., that it improves by keeping, and I was shown some boxes the contents of which were of a beautiful bright liver, and very valuable, but which, when imported some eighteen months previously, were quite a dark brown, and worth only about half their present value. I gathered that a regular trade is done by buying certain parcels when imported and storing them, but, as I am not a connoisseur of this commodity, I prefer to leave such selection to others more capable of judging, and wish them every success in their operations.

West Indian (*Curaçao*).—These are identical with Barbadoes in description and quality, but the latter have always the preference when sold. It has been suggested that the true Barbadoes is no longer cultivated, most of the plants having been destroyed, and what is now sold as Barbadoes is in reality the same plant cultivated in the sister isle of Curaçoa.

According to some authors, aloes are often found adulterated with various articles, chiefly resin, but from information I could gather such adulteration is unknown amongst the merchants who bring these goods to this country.

The natives of Africa (as I have before mentioned) in filling the monkey-skins are, like the cunning Chinese, willing to get the price of aloes for a large stone or other refuse conveniently placed in the centre of the skin, but, except this trick, I could not learn of any adulteration being practised.

In concluding my remarks, I would mention an aloe of the future which I have not yet been able to see, but of which I am promised a specimen at no distant date, viz., that procurable in Madagascar. The plant flourishes in abundance in this island, and the natives collect it in small quantities sufficient for their own consumption, as is noted by several European travellers who have written on the products of this island; but, as yet, it is not collected in sufficient quantity to form an article of export, although there is no reason to doubt that in a few years we may draw a considerable supply of this valuable medicine from this great semi-civilized island.



A NEW APPARATUS FOR FRACTIONAL DISTILLATION.

THE best forms of apparatus for fractional distillation, which is so important for the separation and identification of volatile liquids, have peculiar disadvantages, being either too frail or too difficult to clean or unsuited for small quantities of liquids. Our present article describes an improved apparatus devised by C. Winssinger, which is free from all these drawbacks.

A two-armed glass tube *A D F* is fastened perpendicularly, by means of a good cork, in the neck of a flask *M*. The arm *D* is provided with thermometer, and has a side branch at *F*, which connects with a Liebig's condenser. Into the main tube is inserted a second tube *B*, closed below, and this is held firmly, by means of a perforated cork, so that it is perpendicular and does not touch the inner walls of *A*. Inside of the tube *B* is another, smaller tube *C*, through which a small current of water or mercury is made to flow,

which acts as a condenser. Water is used for substances boiling below 100° C., and mercury for others. If the latter is used, it is made, when it passes out at *G*, to flow into water, from which it is from time to time separated and put back in the reservoir. A circular pinch-cock *H*, bearing upon its margin a series of empirical divisions, and which is regulated by moving the index *K*, controls the amount of water or mercury admitted to the tube *B*.

This very control, and the fine adjustment made possible through the index *K*, permits the proper condensation and almost total separation of fractions of liquids boiling at different temperatures. It will be found by experience, that any given temperature of the thermometer corresponds to one or more of the arbitrary divisions on the margin of the stop-cock, so that the corresponding figures may be after some time placed over the marks.

When using the apparatus, the liquid to be fractioned is put in the flask, the latter placed on a double wire-gauze over a Bunsen's burner (giving an even and regular flame), and a current of water or mercury let flow through the inside condenser *B*, if necessary. Gradually this current is increased or diminished, until some vapor becomes condensed and the first fraction of the liquid distils over. When this ceases, the current of water or mercury will have to be newly regulated as the temperature will rise, until the next fraction passes over, and so on. The portion passing over through *F* requires only a very small Liebig's condenser, and in many cases it needs no further condensation at all.

In order that the tube *B* may not be too suddenly chilled, the stop-cock *H* should be opened as soon as the liquid begins to boil, and a slow current of water or mercury at first be allowed through *B*. As soon as the vapors have reached the thermometer, the index *K* is slowly turned [that is, a stronger stream is admitted] until the temperature of the escaping vapor is as low as possible. When once fairly started, the apparatus may be left to itself, until the flow through *F* is almost stopped or greatly reduced, and the thermometer begins to fluctuate. The stop-cock is then slightly closed, in order to reduce condensation, and the second portion received; etc. The author's experimental figures show that the apparatus works with great accuracy.—*Ber. Deutsch. Chem. Ges.*, 1883, 2,640.

The True Source of Socotrine Aloes.

In the *Chemist and Druggist* for March, Mr. J. O. Braithwaite remarks (in a paper read before the Chemists' Assistants' Association) that a somewhat insignificant fruit rescued from a steam-pan in which socotrine aloes were being boiled had been recognized by Mr. Holmes as immature fruit of *Aloe Perryi*. Until recently the source of socotrine aloes was unknown; but Mr. Bayley Balfour has cleared up the matter and proved that the species yielding the commercial article is new to science. He has called it *A. Perryi*. It has thick, fleshy, *unspotted lanceolate* leaves which spring directly from the level of the earth. *Aloe socotrina* has narrow, rounded, *ensiform* leaves, *slightly spotted*.

Tellurium in Bismuth.

Mr. J. O. Braithwaite (*Chem. and Druggist*) lately exhibited to the Chemists' Assistants' Association samples of subnitrate of bismuth containing about 0.076 per cent, and subcarbonate containing about 0.05 per cent of tellurium and remarked:

"As complaints with bismuth are not infrequent, it may be useful to recapitulate the method by which this unpleasant impurity may be detected. A fair quantity (I use fifty grammes to approximately estimate the tellurium present) is dissolved in excess of hydrochloric acid, and, if the salt is the subnitrate, heat until all the nitric acid is driven off, restoring the hydrochloric acid which evaporates. To this acid liquid add an equal volume or more of a saturated solution of sulphite of sodium, and allow it to stand for at least twenty-four hours. If tellurium is present it will slowly be reduced, appearing first as a reddish cloud, and finally as a black precipitate. This precipitate may be collected on a tared filter, dried at a low temperature, and weighed. The tests for this element are that it sublimes, giving a reddish sublimate; it burns with a blue flame, evolving a most peculiar odor. Fused with an alkali it gives a reddish brown compound, which evolves a fetid and unmistakable odor with hydrochloric acid. Three milligrammes of this precipitate gave a markedly unpleasant onion-like taste in the mouth for some hours after taking the dose.

"Zinc is the only metal which is precipitated by nascent SO_2 under similar circumstances, so that its absence from the sample must be insured before applying the above test."

The Cause of the Bismuth Breath.

Mr. William Reisert, Ph.G., has contributed some interesting data to our present knowledge on the cause of the so-called bismuth breath, which has been quite correctly ascribed to the presence of certain impurities, notably tellurium.

The experiments were conducted with bismuth sesquioxide, freed from all impurities. The absence of arsenic and tellurium was shown by chemical tests, and that of the latter, moreover, by the absence of the peculiar garlic-like odor after taking the bismuth (see below).

The author found that the taking of arsenious acid internally did not communicate any odor to the breath.

Tellurium, on the other hand, was found to be undoubtedly the offending agent. The author took three doses of 0.005 gm. ($\frac{1}{13}$ grain) on one day, in intervals of three hours. In fifteen minutes after the first dose, the breath had a strong, garlic-like odor, and, in an hour, a metallic taste was observed. An hour after the second dose, the urine and sweat had the garlic-like odor, which was also observed in the fæces, four days later. The metallic taste was observed for seventy-two hours, and the garlic-like odor in the urine for three hundred and eighty-two hours; in the sweat, for four hundred and fifty-two hours; in the fæces, for seventy-nine days; and in the breath it was still present, though very faintly, after *two hundred and thirty-seven days*.

The author also made experiments to determine the smallest quantity of tellurium oxide which would be required to produce the garlicky odor. It was found that after *one* dose of 5 cubic centimeters of a solution containing only 0.0000001 gm. of telluric oxide in *cc.*—that is, after *one* dose of 0.0000005 gm. (or $\frac{1}{128000}$ grain) of telluric oxide—the garlic odor became perceptible in seventy-five minutes, and lasted about thirty hours. Smaller doses of the same solution produced no noticeable traces of the odor.

It appears, therefore, that the physiological test for the presence of tellurium is far more delicate than any chemical one so far known. Hence, the failures to detect tellurium by chemical reagents in samples of bismuth producing bad breath no doubt induced various experimenters to ascribe the odor to some other impurity.—Abstract from *Am. Journ. Ph.*, April, 1884.

Emulsion of Paraldehyde.

The best method of giving paraldehyde is in form of emulsion. A sufficient quantity of powdered acacia is made into thick mucilage with water and a little paraldehyde added. The mixture is stirred until it has become perfectly homogeneous, after which another small quantity of water and of paraldehyde are added. This alternate addition of water and paraldehyde is continued, until as much of the latter has been added as the amount of acacia originally taken. If the last addition of paraldehyde has not disturbed the homogeneity of the emulsion, enough water is added to produce 100 parts of product for every 10 parts of acacia or of paraldehyde taken. To the 100 parts thus produced, 20 parts of syrup of almond are added. The dose of this emulsion is one fluidounce, to be repeated, if necessary, after half an hour.

A SIMPLE COOLER.

The most simple and easily managed condenser which we have seen decribed is that of Dr. John Walter, of Basle.

Fig. 1.

It consists of a thin glass tube, closed at one end, into which either one or more smaller glass tubes are inserted by means of a perforated cork or with rubber connection. The glass tube may be longer or shorter, according to the length of the flask or retort into the neck of which it is to be inserted. If merely hung into a flask, as shown in Fig. 1, it will usually accomplish its purpose just as well as if an upright condenser were connected with it airtight. Of course, proper precaution must be taken to prevent the ignition of volatile vapors from the burner below the flask. To prevent actual contact between the cold condenser while the cold water circulates through it, and the hot neck of the flask, a few drops of glass are melted upon it near

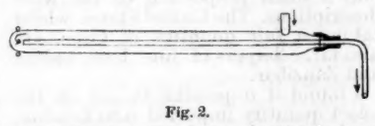


Fig. 2.

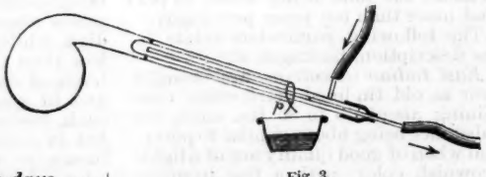


Fig. 3.

the end (see Figs. 1 and 2). Fig. 2 is another form of the condenser, suited for long-necked flasks, or adapted for the necks of retorts. In the case of the latter, the contrivance is only suitable if the liquid is not too volatile to be caught in open capsules (see Fig. 3). —*Dingl. Polyt. Journ.*, vol. 251, 369.

Burn Ointment.

After the application of bicarbonate of sodium to relieve the pain, Dr. Binkerd, of Delaware, recommends the use of the following ointment:

White Wax (pure)	℥ i.
Rectified Linseed Oil	℥ iij.
Tannic Acid	ℑ i.
Subnitrate of Bismuth,	gr. xx.

Melt the wax in a clean tin or porcelain vessel, add the oil, and heat to near boiling, remove from the fire, and add the tannin in fine powder, and then the subnitrate of bismuth. Stir until cold.

Test for Lime and Sulphuric Acid in Citric and Tartaric Acids.

WHILE preparing the articles "Acidum Citricum" and "Acidum Tartaricum" for the second edition of the Pharm. Germ., Robert Otto made some observations which he believes to be new, relating to the test for lime and sulphuric acid in the above-mentioned two acids, in absence as well as in presence of ammonium salts. He says:

In order to determine whether, and eventually how far, the presence of ammonium salts affected the tests for lime in citric or tartaric acids, equally strong solutions of the two latter were prepared, mixed with equal quantities of oxalate of ammonium, and with different quantities of solution of sulphate of calcium. The following facts were then observed.

1. *Citric Acid.* 1 Gm. dissolved in 10 Gms. of water, and mixed with 1 C.c. of solution of oxalate of ammonium (1 in 20). Three portions:

After addition of

a. 1 C.c. of sol. sulphate calcium; remained clear for a short time.
b. 2 C.c. of sol. sulphate calcium: do.
c. 5 C.c. of sol. sulphate calcium: distinctly cloudy within same time.

I. *a. Citric Acid.* 1 Gm. dissolved in 10 Gms. of water, the solution approximately neutralized with watar of ammonia (sp. gr. 0.960), then mixed with 1 C.c. of solution of oxalate of ammonium (1 in 20). Three portions.

After addition of

a. 5 C.c. of sol. sulphate calcium: perfectly clear yet, after 15 minutes.
b. 10 C.c. of do. : do.
c. 20 C.c. of do. : do.

II. *Tartaric Acid.* 1 Gm. dissolved in 10 Gms. of water, and mixed with 1 C.c. of solution of oxalate of ammonium (1 in 20). Four portions:

After addition of

a. 1 C.c. of sol. sulph. calcium: perfectly clear, after 15 minutes.
b. 5 C.c. of do. : do., after 5 minutes.
c. 8 C.c. of do. : perfectly clear, after 5 minutes.
d. 10 C.c. of do. : faintly cloudy, after 5 minutes.

II. *a. Tartaric Acid.* 1 Gm. dissolved in 10 Gms. of water, the solution approximately neutralized with water of ammonia (sp. gr. 0.960), then mixed with 1 C.c. of solution of oxalate of ammonium (1 in 20). Three portions.

After addition of

a. 4 C.c. of sol. sulphate calcium: perfectly clear, after 5 minutes.
8 C.c. of do. : distinctly turbid, after 5 minutes.
10 C.c. of do. : cloudy-turbid, after 5 minutes.

These experiments show that the detection of calcium by oxalic acid is rendered difficult in presence of ammonium salts, while, on the other hand, these salts slightly facilitate the detection of calcium in tartaric acid.

Regarding the detection of *sulphuric acid* in citric and tartaric acids, by means of nitrate of barium, my experiments have shown that this is accomplished with greater precision in acid solution than in one approximately neutralized with ammonia.

I. *Citric Acid.* 1 part dissolved in 10 parts of water. 12 C.c. of the solution mixed with 1 C.c. of solution of nitrate of barium (1 in 20).

Samples.	In acid solution.	Approximately neutralized with ammonia.
a.	Faintly opalescent.....	Remains clear.
b.	Distinctly turbid.....	do.
c.	Between *a* and *b*.....	do.

During equal period of time.

II. *Tartaric Acid.* 1 part dissolved in 10 parts of water.

5 C.c. of the acid solution, mixed with 1 C.c. of $\frac{1}{100}$ normal sulphuric acid, on addition of 1 C.c. of sol. of nitrate of barium yielded *at once* a strong turbidity.

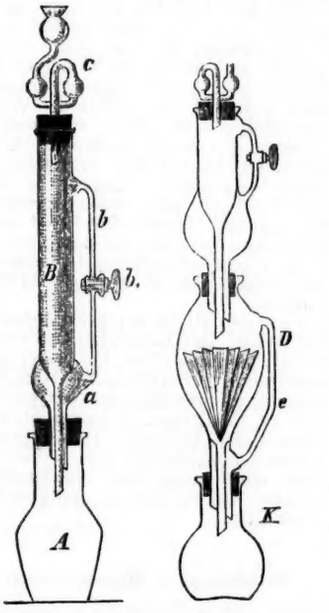
5 C.c. of the solution approximately neutralized with water of ammonia (0.960), even when mixed with 10 C.c. of $\frac{1}{100}$ normal sulphuric acid, and 1 C.c. of sol. of nitrate of barium, *showed no turbidity within six hours.* —*Arch. d. Pharm.*, 1833, Dec.

IMPROVED FORMS OF EXTRACTION APPARATUS.

A. GAWALOWSKI, having had an opportunity of comparing the different foms of extraction apparatus hitherto recommended, finally decided in favor of that devised by Ph. Wagner.

But even here the author found it possible to apply an improvement, the utility of which will be seen further on. The principal addition is a small stopcock *b*, in the lateral tube *b*. The lower part of the cylinder *B*, which contains the substance to be extracted is enveloped by a larger bulb *a*, so that the hot ether vapor may keep it constantly hot. Finally, in place of attaching to the apparatus an upright condenser, he attaches to it merely a Welter's safety-tube *c*, which serves both as a guard against the escape of vapors and as a funnel for adding more menstruum.

The use of the faucet *b* will be understood by imagining the apparatus in operation. Cylinder *B* contains the



substance to be extracted, in fine powder, placed on a pellet of pure cotton which is put in the neck. The receiver *A* is charged with a sufficient amount of volatile liquid (ether, etc.), all the parts connected together, and the flask *A* warmed on a water-bath —the faucet being open. After the vapor has traversed the apparatus long enough to have exhausted all or most of the soluble matters in the substance, the apparatus is removed from the water-bath and the faucet closed. As the temperature falls, a partial vacuum will be produced in the receiver *A*, and this will cause the liquid still retained by the substance in *B* to be almost completely sucked down into *A*. This may be repeated once or twice, and will help to accomplish the exhaustion much more rapidly than is possible in the ordinary kinds of apparatus.

When substances are to be extracted, the solution of which would not become quite clear if filtered merely through cotton, the author uses a modification of the above apparatus, shown in the second illustration. Instead of connecting the exhauster directly with the receiver, a modified Drechsel's funnel *D* is interposed, in which a plaited filter is spread out through which the solution is made to filter, and which is gradually washed by the subsequent portions of the menstruum as they fall into it from the extractor above.—*Zeitsch. f. Anal. Chem.*, 1883, 528.

On Ethylate of Iron (Ferric Ethylate.)

ACCORDING to Ed. Grimaux, if one molecule of ferric chloride, dissolved in absolute alcohol, be added to six molecules of ethylate of sodium, an immediate precipitate of chloride of sodium is produced and a deep reddish-brown limpid solution, which contains no more chlorine. All the iron is in solution in the alcohol as ferric ethylate.

[*Note by Ed. A. D.*—Ethylate of sodium is prepared by dissolving metallic sodium in absolute alcohol. Theoretically, it requires 23 parts of sodium to combine with 46 parts of absolute alcohol to from 68 parts of ethylate of sodium and 1 part of hydrogen which escapes. The quantity of absolute alcohol is, therefore, exactly twice that of the sodium. Ethylate of sodium has the composition $C_2H_5.O.Na$: and ethylate of iron (ferric ethylate) would be represented by the formula: $(C_2H_4)_6.O_6.Fe_2$.]

The above solution, prepared with 3.25 Gm. of ferric chloride dissolved in 25 C.c. of absolute alcohol, and 1.40 Gm. [really 1.38, but the slight excess insures the total decomposition of the iron salt] of metallic sodium dissolved in the same weight [should be, at least twice its weight] of absolute alcohol, may be subjected to distillation in the water-bath, without being altered.* There finally will remain a black, pasty mass, soluble in absolute alcohol, benzin, chloroform, ether, petroleum, and methylic alcohol. But, if this residue be heated in a vacuum, so as to remove the last traces of the solvent, a brown powder composed of ferric hydrate separates: the small quantity of water which the alcohol still retained, or which it has absorbed during the manipulations, reacts upon the ferric ethylate and decomposes it almost completely. By taking the precaution to filter in *dry* air, decomposition is avoided. The product yields only 18.5 per cent of carbon, on analysis.

The alcoholic solution of ferric ethylate is not precipitated by a current of dry ammonia; with dry carbonic acid, it immediately yields an ochre-brown precipitate. Dry hydrosulphuric acid produces ferrous sulphide. Ferrocyanide of potassium acts upon it just like water, and throws down ferric hydrate.

The action of water varies according to the proportions employed. The alcoholic solution, exposed to ordinary air, rapidly absorbs moisture, and yields a thick jelly of ferric hydrate; and the addition of a small amount of water immediately produces the same result. If the alcoholic solution of ferric ethylate is poured into an excess of water, a limpid liquid is obtained which presents the characteristics of the colloidal ferric hydrate described by Graham. This liquid coagulates spontaneously, after a longer or shorter interval, or rapidly, if heated. It is also precipitated by many other substances, such as carbonic, sulphuric, and tartaric acid; nitrate, chloride, bromide, or ferrocyanide of potassium, chloride of sodium or barium, baryta water, carbonate of sodium, and even common river water.

No change is produced by the addition of acetic, nitric, or hydrochloric acid, or of ammonia. Hydrosulphuric acid produces a black precipitate.—*L'Union Pharm.*, 1884, 63.

* This should be understood so that the *heating* does not alter the preparation. We do *not* understand it as if the solution could be distilled. An *iron-ethyl* $(C_2H_5)_3Fe$, is theoretically possible, and would be completely volatile; but it has never yet been prepared. But an iron derivative of ethylic alcohol is *not* volatile.

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EDITORIAL.

The Pharmacy Law of New York City.

ACCORDING to Treadwell Cleveland, Esq., of New York, the pharmacy law formerly applying to New York City has been practically eviscerated by the adoption of the Penal Code of 1881, which, in Sec. 405 provides that:

"No person employed in a drug store or apothecary shop shall prepare a medical prescription unless he has served two years' apprenticeship in such a store or shop, or is a graduate of a medical college, or college of pharmacy, except under the direct supervision of some person possessing one of these qualifications; nor shall any proprietor, or any other person in charge of such store or shop, permit any person not possessing such qualifications to prepare a medical prescription in his store or shop, except under such supervision. A person violating any provisions of this section is guilty of a misdemeanor, punishable by a fine not exceeding one hundred dollars, or by imprisonment not exceeding six months, and in case of death ensuing from any such violation, the person offending is guilty of a felony, punishable by a fine not less than one thousand dollars, nor more than five thousand dollars, or by imprisonment not less than two years, nor more than four years, or by both such fine and imprisonment."

Further on, the Code, in Sec. 726, declares that "all acts or parts of acts which are inconsistent with the provisions of this act are repealed, so far as they impose any punishment for crime, except as herein provided."

This opinion, though apparently based on logical grounds, is, however, not by any means convincing to us. It is by no means settled that all the penalties prescribed by local laws, laws affecting special corporations or societies, are cut off by the Penal Code. It is rather surprising to be told that hundreds of laws can be made nugatory and repealed in *effect*—though not repealed by name—by means of making inoperative any clauses contained therein which provide for punishing infractions of these laws. To cut out these clauses practically amounts to the same thing as to repeal the laws which contain them. Could this have been the intention of the Legislature? There are, no doubt, numerous other local laws, some of equal importance with the pharmacy laws for New York and Kings Counties, which would become inoperative, to the great damage and, perhaps, danger of the public, were the opinion of Mr. Cleveland to be correct. It seems to us that it is proper to regard the opinion of any lawyer—no matter how high his standing—as premature and worse than useless unless it be adopted by the judge on the Bench, and finally the Court of Last Resort, after a thorough argument on both sides of the question. We acknowledge that there is plenty of chance for a strong argument on *both* sides, but cannot help regretting if a spirit of opposition against the established and, in our opinion, unrepealed laws should become developed among those who have not yet complied with their provisions, merely by reason of the publication of a single lawyer's opinion.

More recently it is reported that the bill before the Legislature to enact a a State pharmacy law, has been passed, and that it prohibits not only the dispensing of prescriptions, but also the sale of medicines, in towns above a certain size, by others than regularly licensed pharmacists and physicians. This may avoid the enactment of another special law to apply to New York City.

Pharmacy in Massachusetts.

THE Old Bay State does not often take a step backward, and the result of the recent contest in its Legislature over the enforcement of good laws to prevent food and drug adulteration may well be the subject of congratulation.

During the debates, both in committee and before the House, on the bill proposing to repeal the law preventing Adulteration of Food and Drugs, it became evident that an interested clique had obtained the ear of a majority of the Committee, and had succeeded in convincing them: 1, that the United States Pharmacopœia was a sort of boiled-down extract or a skeleton-like index of the United States Dispensatory; 2, that the United States Dispensatory was the standard followed by pharmacists in general for preparing medicines; 3, that the Pharmacopœia was based on the Dispensatory, and was prepared by a sort of non-descript, self-constituted body, who did this merely to make money; 4, that the sooner any law recognizing the Pharmacopœia as a standard was repealed, the better it would be for the country; 5, that it was unfair to establish a limit for the purity of drugs, inasmuch as it could not make much difference if a drug contained, say forty-four parts of impurities, when the law had set the limit at forty-six parts, etc., etc., etc.

The report of the *majority* of the Committee was in favor of a repeal of the law, and plainly showed the kind of mother's milk the innocent babes had been fed on. To the credit of the House, however, let it be said that the well-laid scheme was upset. After a thorough argument in open session, during which various members distinguished themselves by an intelligent exposition of the true facts of the case, and gave a lucid and impartial statement of all the concomitant circumstances, the House, by a large majority, adopted the *Minority* Report of the Committee, objecting against the repeal of the law.

It is perhaps true that the law might have been carried out with a little more tact and a lesser degree of harshness, at least in the beginning. But whatever errors may have been committed in this direction formerly, it is pretty certain that the law will hereafter be enforced without bearing too hard upon those who infringe it innocently and unintentionally.

Menthol from American Oil of Peppermint.

AMERICAN oil of peppermint, derived from *Mentha piperita* L., has heretofore not yielded any menthol or peppermint-camphor except by accident. Occasionally a can or bottle containing the oil, when exposed to a low temperature, has been known to deposit the substance. We are informed by representatives of one of the largest manufacturing firms of essential oils that they have noticed this phenomenon at rare intervals, and that no assignable cause could be discovered why in one package the camphor separated, and in another of the same lot it refused to do so.

This peppermint-camphor is, however, afforded in large quantity by Chinese or Japanese oil of peppermint, obtained from *Mentha arvensis* L. Menthol may easily be obtained from this oil by cooling, or better still, by previously removing a portion, or as much as possible, of the lighter-boiling terpine contained in it, by distillation with water. This same process has deretofore not succeeded in effecting the separation of menthol from the American oil.

Mr. Albert M. Todd, the large grower of peppermint and distiller of peppermint oil, at Nottawa, St. Joseph's County, Michigan, has at last succeeded in overcoming the difficulty, and has found a method by which he obtains the menthol of the American oil in a crystalline condition. The crystals are long, brilliantly white, soft, flexible, silky needles of a very pure odor, and will, no doubt, find a ready market.

WE desire to call special attention to the article on the "Separation of Mercuric from Mercurous Iodide," by Mr. Maclagan, on p. 82 of this number. According to the author's observations, it seems impossible to treat mercurous iodide (protiodide of mercury) with any solvent capable of removing traces of mercuric (red) iodide without decomposing some of the former salt, and actually *producing* a corresponding amount of the red iodide.

The results of the author already foreshadow the probability that the true color of absolutely pure mercurous iodide (which has so far remained in dispute) may finally be decided, and that additional light will be thrown on the cause of variation of activity or poisonousness of the different lots of mercurous iodide in the market.

Taste in the Practice of Pharmacy.

THE following hints are taken from a paper by Mr. Peter Boa, published in the *Chemist and Druggist* for March.

The exercise of taste in the business of a pharmacist is concerned with the quality and kind of articles employed to contain or convey medicines, and includes such things as twine, bottles, sealing-wax, paper, and labels. Of the quality of these customers are able to judge. They know superior twine from inferior, and they can see at once whether it matches the capping-paper. They can recognize and appreciate a symmetrical bottle, and condemn an ugly one. If the color of the wax be bad it is unsightly, inferior paper is an abhorrence to any one, and a badly written or printed label is easily recognized. Of the contents of a bottle of medicine the patient has no means of forming an opinion, but he can very fairly estimate the style of wrapping it. If the articles employed for this purpose be of inferior quality, suspicion is excited; if faultless, confidence is created, and confidence always promotes business.

In the choice of *bottles* we cannot go far astray. If we deal with good makers, and pay a reasonable price, we are pretty sure to get presentable bottles. Shape is very much a matter of opinion. Oval bottles are pretty, but flats are more easily wrapped neatly, and packed better, and are, I think, less liable to be smashed by pressure, and they look very well if symmetrically made. If the angles of flats be sharply defined they rather add to the beauty of the bottles. Ovals, moreover, show defects more readily. In phials there is not much room for selection. Those of medium height are preferable, I think, both in point of utility and appearance, to the short or long varieties. Actinic phials are very pretty, and are useful for certain purposes. They are open to the objection, however, that one cannot see through them with the same facility that one can see through uncolored glass. When dispensing two different kinds of drops or small mixtures of the same size for the same patient, it is convenient by way of distinction to put up one into each kind of phial, and the variety is pleasing to the eye. The ordinary poison-bottles have no redeeming feature in their character, except their shape. The blue color is not nice, and it is open to the serious objection that one cannot see through it. The color and shape, moreover, conceal cracks and pin-holes in the corners so readily that the bottles are fertile in causing annoyance by being filled when cracked and leaking after the medicine has been sent out.

The *twine* used should be of good color if colored, if white thoroughly bleached. In color I prefer pink or red. Yellows and blues are, generally speaking, out of harmony with all the other things. Pink and white are suitable for all purposes, the pink for parcels and capping, the white to tie split skin capping. It is scarcely necessary to say that it should be evenly spun throughout and well twisted. There is something as attractive about the appearance of a well-made brightly-colored twine as there is repulsive about a twine that is thick and thin alternately and feebly colored. The twine is of great importance. A common twine is an offence against all the rules of taste that relate to our business. We do not deal in articles of such a nature that a twine of this description is permissible.

Sealing-wax does not require much to be said regarding it. In use it ought to be sparingly applied, and not splashed on in great lumps. When used for external decoration, such as sealing the top of a cork, care should be taken to preserve it as clean as possible, so that its color loses none of its brightness. What the color is need not be of much concern. Red is the conventional tint, and I have no fault to find with it.

Labels afford more scope for the exercise of taste than any other accessory to our business. There is a variety in them. Some are printed ready for use, others written as occasion arises. There is no excuse for any one having ugly stock labels, because the label printers, if left to their own discretion, usually produce very good specimens. However, we do see samples of badly-arranged labels even yet. The fault generally lies in want of variety of type, or printing the matter too closely and continuously, as if it were part of the column of a newspaper. Two or three kinds of type on a label give it a character which it wants if all of one kind. If it contain simply the name of the article and the directions, there is, of course, opportunity for only two kinds, but, as a rule, labels of this description have the name of the article, its medicinal properties, and the dose. Such labels should always be set up in three types, or, if two parts be of the same kind, one should be a size larger than the other. Variation in size or kind renders each one more distinct than if they were all the same, and, besides, the effect is more pleasing, partly because of the distinctness, and partly owing to the pleasurable sensation that naturally arises when anything looked at conveys the impression of design which has produced a successful result. Labels intended for bottles should have the length up and down the bottle. The effect to the eye is more pleasing, apart from the fact that a label of this kind enables its contents to be kept all before the eye, which is preferable to having to turn the bottle to one side at the end of each line. More opportunity is afforded also for varying the type, and the variety is more effective. With regard to the matter on a label, I can scarcely say anything, because so much depends on the medicine of which it is to be descriptive. I may, however, I think, safely say that the wording of a label should be concise and to the point, having each idea following the other in logical sequence. Any digression is to be avoided, as it is not desirable to produce something which is a compromise between a label and a handbill, but which is unsatisfactory as either. Such a label would be a mistake from a business point of view, as well as an offence against good taste. For ordinary purposes it is not good taste to indulge in fulsome laudation of any preparation on the label thereof. It is quite enough to state the complaint for which it is used, and call it by its name, without adding that it is "far-famed" or "world-renowned." If it be the intention to push the article as a quack medicine, then, of course, the greater the number of prefixed laudatory adjectives the better. Modesty on the part of the promoter of a quack remedy does not give good results.

Some establishments, for the sake of uniformity, as they say, adopt a certain style of dispensing-blanks in various sizes, and have all their stock labels printed on one or other of these blanks. Such labels are never pleasing to the eye. They have a patched-up look about them. The printed part in the centre generally looks as though it had been pasted on. Such labels certainly reduce the necessity for any intelligence on the part of the printers, and insure the result that all the labels in the establishment are uniform in ugliness.

White paper and black ink are all that is required. Colored ink is never satisfactory in connection with labels for medicinal preparations. Some chemists have their labels printed in blue. When well executed they are, perhaps, free from any serious objection. Any more brilliant color, however, would be sure to give offence.

The production of good blank labels is a more difficult undertaking than getting up printed labels. It is not enough to get the name and address printed, with a blank space attached. Some have the blank space above and the name and address below, others have this arrangement reversed, while the majority, I believe, have the blank space between the name and the address. In this my sympathies are with the majority. Of the two former I prefer the one with the name and address above. It may appear top-heavy to a certain extent, but to the eye it never presents the aspect of utter blankness which belongs to the space at the top. The nakedness of the upper portion seems to be increased, moreover, in proportion to the amount of printing below. One line of printing at the bottom does not expose the blankness so much as two or three lines. When we reverse the arrangement the effect is the opposite. If the printing be at the top it should be in two or more lines; if at the bottom, in one, if possible. Similarly, when the space is in the middle, the larger portion of the printing should be on the upper part. On round labels the name and address should be so arranged into two portions that each occupies exactly half the circle. The printed matter on blank labels—particularly those used in dispensing—should be as simple as possible. The name, designation, and address are quite sufficient to meet all requirements. The addition of "chemist by examination," "late manager to so-and-so," is in very bad taste. There is not any objection to such a parenthetic addition to circulars, but I entertain a decided conviction that a dispensing-label is not an appropriate place for an advertisement. Some pharmacists adorn their labels with a coat-of-arms, a mortar, or other device. While I would not entirely condemn embellishments of this kind when judiciously employed, I would say, without any hesitation, that we can never err in having our labels without them.

When we have obtained a satisfactory dispensing-label, we must be careful to have whatever directions it contains neatly written. If it be clumsily written the beauty of the label is lost. The labor expended in perfecting the label is thrown away. And, again, the perfection of the label only serves to more clearly indicate the demerits of the writing. Those who are not good writers need not despair, and those who are expert penmen need not take to themselves too much credit until they hear all I have to say on this point. The best writers do not always execute the neatest labels. Sometimes an inferior writer produces a very neat label. So much of the effectiveness of a label depends upon the arrangement of the matter that, unless judgment be exercised in this respect, the most beautiful penmanship goes for very little, and greatly inferior caligraphy may make a very presentable appearance when the way in which it is adjusted is judiciously managed. With regard to the writing itself, it should be distinct, easily read, compact, and free from flourishes. If it be good it can afford to do without any superfluous embellishment, and if it be bad no amount of adornment will hide its defects. We cannot too carefully cultivate the art of penmanship. It is a great auxiliary to the successful prosecution of our business. I confess to having a preferential leaning to a good writer, although his scientific knowledge be somewhat shaky at some points.

In writing a label we must take care to balance the matter so that its parts may form a symmetrical arrangement.

All the lines must begin and terminate at the same distance from the margin. If we write "The Mixture" or "The Powders," we must take care that it is exactly in the centre. The appearance of a label is greatly marred by having having it nearer to one side than the other. We must also be cereful to manage the adjustment of the matter so that it may fill the label pretty well. To have a label with two lines of writing at the top and three left unoccupied at the bottom is to sacrifice its proportion. It is in this connection that a middling writer who has an eye for proportion in form may surpass a good writer in execution of a label. The free and easy writer too often trusts so much to the excellence of his work that he altogether neglects the just apportionment of its parts.

Having the label written, we must, before putting it on the bottle or box for which it is designed, see that its outer edge is nicely trimmed from all superfluous white paper. It is very unsightly to see a piece of white paper projecting from one corner, or to see a broad piece of white at one side, while the other is cropped to the margin. A very small margin of white beyond the border-line is rathar an improvement than otherwise, provided it be kept of the same breadth at each side. It may be said that customers do not observe such trifles. That may be, but that is not the point. If we let a label leave our hands knowing that it is not as it should be, we are untrue to ourselves; therefore we should never slur over even such a trifle.

Before putting a new label on a bottle the old one should be removed. It is a very slovenly proceeding to stick it over the old one. One day last week I had the labor of picking *five* labels off one bottle, and all had been affixed by the same chemist. They were piled one on top of the other. When more than one label requires to be put on a bottle, they should be so put on as to convey to the eye a due sense of balance in the adjustment. In the case of two, the larger one placed in the usual position, and the smaller at the bottom, is generally the most suitable arrangement. When three are used they should be placed at equal distances from one another.

There is not much to say regarding the labelling of boxes, except, perhaps, in the case of pill-boxes it may be said that the labels should, if possible, be the exact size of the box, and if they should happen to be smaller a piece of capping-paper or similar material should be used to cover the top of the box prior to affixing the label. It produces a much more agreeable effect than the appearance of a small label in the middle of a white unfinished surface.

Various as are the tastes displayed in the choice of labels, they are few compared to the diverse opinions which seem to prevail regarding stamps used for prescriptions. Suppose we get possession of a prescription that has been over England, Scotland, and Ireland, and perhaps part of the Continent, we may find on it the impressions of say a dozen different chemists' stamps, and of these no two will be alike. Some will cover perhaps, a sixth of the prescription. Some of these large stamps are excessively vulgar. They have no commendable feature except their size, which would render them admirably serviceable for stamping sacks were their proprietor a wool broker or potato merchant. To put such a stamp on a prescription is to take an unwarrantable liberty with another person's property. The prescription is handed to us to be dispensed, not to be disfigured with a circular advertisement in red ink, for large stamps are generally used with brilliant ink. If we stamp the prescriptions, we do it subject to the permission of the owner. I have had experience of a person who, when he wanted a prescription dispensed, handed it in with this request: "I want you to make up this for me, and be careful not to soil the prescription. You may put your number in the corner, but I will not have you disfigure my paper with your stamp." Our stamp, therefore, should be modest. A small neat embossing stamp is, I think, preferable to one used with ink. The use of a stamp with ink produces an impression that is at once observable on the white paper, and if it be not a nicely-arranged and symmetrical stamp it produces a disagreeable effect on the eye, whereas in the case of an embossed stamp the impression is quite distinct, and yet, though it be not put on exactly straight, it does not strike one so readily that there is anything wrong with it. There is something strong and genuine about the appearance of the clearly-defined characters of an embossed impression, while even the best of ink impressions have a kind of factitious stuck-on look about them. Some of the latter, I am ready to admit, when they are symmetrically arranged, of small or medium size, and carefully used, are very presentable.

Regarding *paper* I would merely say that it should be of good quality. Inferior varieties of white paper in particular should be avoided.

In our choice of *corks* we ought to exercise great care. Bad corks are fertile sources of annoyance. Unless the wood from which they are made be sound and flexible the results are sure to be vexatious. Nothing rouses the wrath of a patient so much as to have a cork snap off short on a level with the bottle at the first attempt to withdraw it. Even in so small a matter as the use of corks there is room for the exercise of taste. If we set three novices to cork a bottle each, and watch their preceedings, we may gain material for reflection. The result will not unlikely be that the first will select a cork much too small for the bottle, and drive it in till it becomes tight just at the varnishing-point, leaving a long unconfined point penetrating into the interior of the bottle; the second will choose a cork of too large a size, and get the point only inserted, leaving as much outside the bottle as the first had inside; the third will select a cork which will fit properly when about one-half is inside the neck of the bottle and the other out. All three probably arrive at their results without going through any process of reasoning. Their object is to secure the contents of the bottle, and this they attain in different ways. The reason that one of them accomplishes his object as it ought to be done is probably because his eye has a nicer perception of just proportion, and he adjusts the cork in the way he does because it pleases his eye.

Aseptol a Soluble Substitute for Carbolic and Salicylic Acids.

BY C. ANNEESSENS, OF ANTWERP.*

SINCE the introduction of carbolic and salicylic acids as antiseptic agents, the manufacture of these substances has been greatly improved, so that they are now furnished in a much purer state than formerly. Nevertheless, their limited solubility makes their application sometimes difficult, and, besides, they have always remained comparatively high in price, in spite of their large consumption. The temporary competition of thymol and chloride of zinc has not been strong enough to interfere much with their employment.

The antiputrid, antiseptic, and antifermentative properties of carbolic and salicylic acids are at present commonly recognized, except by a few who obstinately refuse to recognize clear distinction between antiseptics and disinfectants. Their employment has become general in all sanitary matters, and if it were not for their limited solubility, they would be employed in many more surgical emergencies than they are now.

This drawback, however, may now be considered as removed, since we have at our disposal the new substance *Aseptol* (ortho-oxyphenyl-sulphurous acid), which possesses all the chemical and antiseptic properties of carbolic and salicylic acids, while being *completely* and *abundantly* soluble in water.

Aseptol is a perfectly definite substance. Its molecular structure: $C_6H_4.HO(^1).SO_2HO(^2)$ is exactly parallel to that of salicylic acid: $C_6H_4.HO(^1).COOH(^2)$;* that is, it may be regarded as benzol, in which the hydrogens of the *ortho*-position (compare last number, page 77), viz., those attached to two immediately succeeding carbons, are replaced by hydroxyl and sulphurous acid (minus one hydrogen). The compound has the same characteristics and antiseptic powers, which are, however, augmented from one to three hundred times, at the ordinary temperature, by its ready solubility.

While carbolic acid is a weak acid, scarcely combining with bases, and not being able to saturate the ammoniacal bases which form part of ferments, *aseptol* acts with great energy, on account of its perfect saturating power and great solubility.

It is a viscid liquid, of a slightly red color, and a spec. grav. of about 1.450. Its odor recalls that of carbolic acid, but much less so when in solution. When fused with potassa, it furnishes pyrocatechin, resorcin, and hydroquinone.

It may be used, internally, in doses intermediary between those of carbolic and salicylic acids, without producing the irritating and toxic effects often following the latter. When dissolved in common water, even at the rate of one part of one thousand (or even more dilute), and used as a wash, irrigation, or spray, it forms an eligible substitute for both carbolic and salicylic acids, and will render great service in the hygienic management of hospitals, schools, public streets, and any other places where it is necessary to destroy morbid ferments in the air.

Note on Tincture of Hyoscyamus.

IN a paper by William Gilmour in the *Pharmaceutical Journal*, the writer says, in conclusion, that the spectroscope does *not* distinguish between a tincture made from an annual or biennial plant.

The milky turbidity on the addition of water is not a test to distinguish the one from the other; but it is a fairly good test as to the quality, so far as age, exposure, etc., of the biennial plant is concerned.

A proof-spirit tincture, although quickly changing so far as the chlorophyll matter is concerned, does not show this change, to any extent, to the naked eye, while the more important chemical changes, which ultimately affect the quality of the tincture therapeutically, are comparatively slow.

A rectified spirit tincture undergoes very rapid changes, which are very conspicuous to the naked eye, and which are almost certain to end in rapid chemical changes affecting the therapeutic value (if it possesses any) of the tincture.

Rectified spirit does not possess the same power of exhausting the henbane of its extractive matter as proof-spirit.

A rectified spirit tincture and a proof-spirit tincture are quite unlike in their appearance, so much so as practically to make them unrecognizable.

* From a reprint from the Journal de Pharm. d'Anvers, Feb., 1884, communicated by the author.

* The superior figures 1 and 2 here refer to the positions 1 and 2 (ortho-position) in the Benzol ring.

The Assay of Hydrogen Peroxide.

THE increasing commercial importance of hydrogen peroxide and the variability, in strength, of the commercial article, make it necessary to apply some reliable process of assay. Roscoe and Schorlemmer, in their Treatise on Chemistry (vol. I., p. 261) give the following reaction for the volumetric estimation of the compound by means of permanganate of potassium:

$$\underset{\text{potass. permang.}}{2KMnO_4} + \underset{\text{hydrogen peroxide.}}{H_2O_2} + \underset{\text{sulph. acid.}}{3H_2SO_4} = \underset{\text{potass. sulphate.}}{K_2SO_4} + \underset{\text{manganese sulphate.}}{2MnSO_4} + \underset{\text{water.}}{4H_2O} + \underset{\text{oxygen.}}{3O_2}$$

Messrs. Carpenter and Nicholson, however, have recently shown that the above reaction is incorrect, and that it should be expressed, as Kingzett already gave it, thus:

$$2KMnO_4 + 5H_2O_2 + 3H_2SO_4 = K_2SO_4 + 2MnSO_4 + 8H_2O + 5O_2$$

Kingzett proposed to titrate the solution by means of standard hyposulphite of sodium, having previously added iodide of potassium from which the hydrogen peroxide liberates an equivalent quantity of iodine.

The authors find, however, that accurate results are obtainable by this method only with difficulty and under observance of certain precautions. The method depending on the measurement of the evolved oxygen is, likewise, difficult of execution and liable to inaccuracies. But the permanganate method is easy and always furnishes close results. Nevertheless, the authors have obtained fairly coincident results with all three methods on one and the same sample of hydrogen peroxide, and it was this very fact which enabled them to prove the correctness of Kingzett's reaction.

According to the equation last given (containing the $5H_2O_2$), each cubic centimeter of decinormal permanganate solution (that is, one corresponding exactly to decinormal oxalic acid solution), corresponds to 0.0017 gm. of peroxide of hydrogen, and evolves a total of 0.0016 gm. or 1.1188 C.c. of oxygen.

The assay is made as follows: 10 C.c. of the peroxide of hydrogen are mixed with 40 C.c. of slightly diluted sulphuric acid (1 of acid and 3 of water), and made up with water to 100 C.c. The decinormal solution of potassium permanganate is now run in until a faint pink tinge, permanent for a few minutes, becomes visible.

In Kingzett's process, the following reactions occur:

a. $\underset{\text{potass. iodide.}}{2KI} + \underset{\text{hydrogen peroxide.}}{H_2O_2} = \underset{\text{potass. hydrate.}}{2KHO} + \underset{\text{iodine.}}{I_2}$

b. $\underset{\text{iodine.}}{I_2} + \underset{\text{sodium hyposulphite.}}{2Na_2S_2O_3} = \underset{\text{sodium iodide.}}{2NaI} + \underset{\text{sodium tetrathionate.}}{Na_2S_4O_6}$

1 Cubic centimeter of standard hyposulphite is, therefore, equivalent to 0.0017 Gm. of H_2O_2, or, in other words, is exactly equivalent to 1 C.c. of the decinormal permanganate.

The authors also tried bichromate of potassium, in presence of sulphuric acid, as a volumetric reagent. In this case, *half* the volume of oxygen liberated is derived from the peroxide, perchromic acid being formed as an intermediary step, thus:

a. $\underset{\text{potass. bichromate.}}{K_2Cr_2O_7} + \underset{\text{hydrogen peroxide.}}{3H_2O_2} + \underset{\text{sulph. acid.}}{H_2SO_4} = \underset{\text{potass. sulphate.}}{K_2SO_4} + \underset{\text{perchromic acid.}}{Cr_2O_8} + \underset{\text{water.}}{4H_2O} + \underset{\text{oxygen.}}{O}$

b. $\underset{\text{perchromic acid.}}{Cr_2O_8} + \underset{\text{sulph. acid.}}{3H_2SO_4} = \underset{\text{chromium sulphate.}}{Cr_2(SO_4)_3} + \underset{\text{water.}}{3H_2O} + \underset{\text{oxygen.}}{2\tfrac{1}{2}O}$

With reference to the term "volume-strength," it is noticeable that dealers have somewhat vague ideas as to its significance.

The total volume of gas liberated by the action of potassium permanganate from *one volume* of the peroxide of hydrogen [often also called "hydroxyl"] solution, is the most lucid and definite explanation which the authors have received. But, if this were the case, it would give to most samples tested by the authors nearly double the strength that they were stated to be. Hence this method of stating strength may be at once discarded, since it is not the ordinary commercial custom to understate values

Evidently the *volume of oxygen gas* available in one volume of the peroxide solution is the only proper meaning of the term.

The samples examined by the authors were obtained from firms of good repute, were sold as being of fair commercial quality [all of them contain traces of fixed substances, and usually traces of free acid], and nearly approximated to the strength stated.—After *The Analyst*, March 1884.

Filtration and Preservation of Decoctions and Infusions.

THE *Chemist and Druggist*, in an abstract from a paper read by Mr. J. A. Hislop, before the Hawick Pharmaceutical Association (Scotland), says: He constructs a filter out of two funnels, one a little larger than the other, about two feet of india-rubber tubing $\frac{3}{8}$ of an inch in diameter, a sponge, $\frac{1}{4}$ yard of flannel, and the same of lint.

To the lower end of the larger funnel, which is supported by the ring of a retort stand, is attached the india-rubber tubing, and to the other end of the tubing is fastened the small funnel inverted. Over the larger funnel is now tied a portion of the flannel cut to a suitable size and shape, which retains the larger pieces of solid matter of the infusion. In the small funnel is inserted a sponge, large enough to occupy the whole space, and the mouth is securely closed with a piece of lint. The infusion or decoction being now poured into the upper funnel passes rapidly down the tube, and the weight of the column is sufficient to force the liquid quickly through the sponge and the lint, which retain the smaller particles of matter, and allow only a bright and sparkling fluid to filter through.

The Refining of Shellac.

CRUDE shellac is refined in the following way: one and a half kilos of soda are dissolved in forty-five liters of water contained in a small boiler or kettle; 5 kilos of the crude shellac are added in small quantities at a time. This turbid solution has the characteristic odor of shellac and a violet-red color. The liquid is boiled for a few minutes, and, while hot, a wooden air-tight cover is connected on the vessel. When the vessel is quite cold, the cover is removed, and the thin cake of fat which is found on the surface is separated. The solution is filtered through linen, the clear filtrate slowly decomposed with dilute sulphuric acid, and the resulting shellac washed with water until no acid reaction remains. The washed resin is now pressed and melted in boiling water, when it can be shaped with the fingers. This shellac is placed in water containing glycerin, and when hard is dried. The refined shellac forms yellowish-white, glistening tufts or bars, which when dry, are yellowish-brown; it should entirely dissolve in alcohol.—E. L. ANDES, in *Scient. Amer.*

A new Test for Lead.

BY A. WYNTER BLYTH, M.R.C.S.

A SOLUTION of cochineal is prepared by boiling the ordinary commercial cochineal in water, filtering, and then adding sufficient strong alcohol to insure its preservation from mould. A few drops of this solution added to a colorless neutral or alkaline solution, containing dissolved lead, strikes a deep mauve blue to a red with a faint blue tinge according to the amount of lead present. The test will distinctly indicate a tenth of a grain of lead per gallon in ordinary drinking water, and by comparison with a solution free from lead, much smaller quantities are indicated.

In searching for traces of lead in water, it is convenient to take two porcelain dishes; into the one place 100 C.c. of the water to be examined, and into the other, a solution of carbonate of lime in carbonic acid water, known to be lead free, and approximately of the same hardness as the water to be examined, then add to each an equal bulk of the coloring matter in quantity sufficient to tinge the water distinctly; the colors may now be compared, the slightest blue tint will be either due to lead or copper, for copper in very dilute solutions gives a similar tint, but in solutions of 1 to 1000 or stronger, the hue is so different as to differentiate the two metals.

The method is within certain limits applicable for quantitative purposes on the usual colorimetric principles. As a qualitative test, it is superior to hydric sulphide and more convenient.

[During the discussion of the preceding paper, the following remarks were made: Dr. Stevenson inquired if varying the amount of alkalinity in the water, or the presence of considerable quantities of carbonates had any effect.

Mr. Blyth said that, of course, they altered the hue, but the blue was still very decided. He had tried all kinds of salts; but as it was a new test, he would be a bold man to say that it was really confined to these, although, as far as he knew, it was peculiar to lead and copper, with the limitations he had mentioned. The tests were confirmed by other reactions.]—*The Analyst*, March, 1884.

Salicylic Acid in Facial Neuralgia.

SALICYLIC acid is proposed by Prof. Nussbaum, of Munich, as a remedy for facial neuralgia. Three grains of the acid, mixed with about thirty grains of salicylate of sodium are given from four to six times during twenty-four hours. It is said by Radier (*Medical News*) that neuralgic pains may be relieved by painting the affected part repeatedly with the following solution: Chloral Hydrate and camphor, of each two drachms, Morphia Sulph., half a drachm, and Chloroform a drachm. A solution of a drachm of camphor in two drachms of chloroform or ether also proves useful.—*Can. Ph. J.*

Santalin.

THE *Zeitschrift f. Anal. Chem.* gives a process for extracting santalin from sandal wood by means of borax which consists in boiling the crushed wood with water to eliminate its tannin; heating the residue with a solution of borax and saturating it with lime until the coloring matter is entirely removed. The filtered liquid is then treated with sulphuric or hydrochloric acid until no further precipitate is obtained. This red, bulky precipitate is filtered out and dissolved in boiling alcohol and on cooling the santalin separates in the form of a red, crystalline powder.

Manufacture of Aluminium.

IT is stated that Salinders is the only place in the world where aluminium is manufactured, about 2,400 kilos of metal being produced annually. The sodium used in the manufacture is obtained by igniting sodium carbonate with carbon in presence of a small quantity of lime, which is said to facilitate the distillation. The double chloride of aluminium and sodium is prepared by strongly heating a mixture of alumina, carbon, and sodium chloride in a current of chlorine. The resulting double chloride is then fused with the sodium in small reverberatory furnaces, cryolite being added as flux.

Much has recently been said in the newspapers with respect to an invention by which it is supposed that Webster of the Aluminium Crown Metal Work, Hollywood, has greatly cheapened aluminium. The preparation of one ton of aluminium is said to cost only 2,000 marks. The method consists in strongly heating bauxite with sodium carbonate, decomposing the sodium aluminate with carbonic anhydride, heating the deposited alumina with carbon in a current of chlorine, and fusing the resulting double chloride of aluminium and sodium with sodium and cryolite. This process is neither new nor is it possible to produce aluminium at a lower cost than at Salinders. Webster has also patented a method for preparing alumina for the manufacture of aluminium, which relates to the obtainment of anhydrous alumina from potash alum. The method is impracticable and costly.

Morris obtains aluminium by treating a mixture of alumina and carbon with carbonic anhydride. A solution of aluminium chloride is mixed with pulverized charcoal or lampblack, evaporated to a thick paste, cooled, and made into balls, which after drying are placed in iron tubes and heated. The last traces of chlorine are removed by passing steam through the tubes. The heat is then increased to dull redness and carbonic anhydride introduced. The carbon reduces the carbonic anhydride to oxide, and this is said to reduce the alumina to aluminium.—*Dingl. Pol. Jour.* and *Jour. Chem. Soc.*

Detection of Alohol in Essential Oils.

THEODORE SALZER reviews the methods heretofore proposed for detecting alcohol in essential oils, and finds that a combination of the distillation and the fuchsin process is the most sensitive.

He proceeds as follows:

A little of the essential oil is poured into a dry test-tube, taking care not to wet it in its upper portion, and a few fragments of fuchsin are then sprinkled upon the middle and upper inside surface of the test-tube. On heating, no change will be observed, if alcohol was absent. But if the oil contained even as little as one-tenth of one-per-cent of alcohol, the ascending vapor of the latter will cause each particle of fuchsin to be surrounded by a red stain, either at once or after setting the test-tube aside for a short time. It is easy to recognize by this test the presence of one milligramme of alcohol in one gramme of the oil.

The author, in quoting this test, applies it specifically to oil of lemon, and attaches the remark that the method will undoubtedly be applicable to other essential oils or to the detection of alcohol in other liquids which do not of themselves exert any solvent action upon fuchsin.—*Pharm. Zeitung.*

[We have tried the process upon a few other oils, and have found it, so far, to work satisfactorily. We recommend to put a small quantity of essential oil into a *long* test-tube, without wetting the sides, then to push a loose pellet of cotton down to the middle of the test-tube, and to sprinkle a very little powdered fuchsin in. The boiling must be done cautiously.—ED. A. D.]

Pure Hydrosulphuric Acid Gas.

IN precipitating arsenic from solution it is necessary to have sulphydric acid that is absolutely free from arsenic. Otto and Reuss recommend, for the preparation of this gas, the substitution of calcium sulphide for iron sulphide. The former may be prepared by heating gypsum and charcoal together at a high temperature. This is acted upon by pure acid free from arsenic. As no hydrogen is formed, any arsenical compound in the acid could not be reduced to arsenetted hydrogen. To obtain a steady and quiet current of gas, large pieces of the calcium sulphide are placed in a Woulffe's bottle, a little water poured on it, and a twenty-five-per-cent hydrochloric acid allowed to flow slowly from a funnel with stopcock, drop by drop. Barium sulphide is also an excellent material for this purpose.—*Chem. Zeit.*

Test-Paper for Detection of Albumin.

THIS mode of testing for albumin is recommended by Dr. G. B. Fowler, of New York, on the ground of its sensitiveness and the convenience of its applications. (It can be used at the bedside of the patient.) The paper can be saturated with a solution of tungstate of sodium, potassio-mercuric iodide or the ferrocyanide of potassium, and other papers acidulated with citric or acetic [?] acid. Let the papers dry, cut them into strips, place them in a box with a partition, and, when it is desired to examine a specimen of urine for albumin, put one slip of each of the two kinds of paper into the fluid, and if albumin is present it will be seen to fall in a cloud. The paper prepared with the potassio-mercuric iodide is so sensitive that it reveals the presence of five one-hundredths of one per cent of albumin.

This solution is made by adding 3.33 parts of iodide of potassium and 1.35 parts of bichloride of mercury to 100 parts of distilled water.—*N. Y. Med. Jour.*

Bleaching Bone and Ivory.

C. PUSCHER says in the *Chemisches Centralblatt* that bone and ivory may be permanently bleached when they have become yellow by age, by using the following process.

25 Gms. of pure zinc white are to be covered by 40 C.c. of water and 50 C.c. of concentrated sulphuric acid gradually added. 150 C.c. of hot water are then added, and with stirring just enough water of ammonia to redissolve the precipitated hydrate of zinc. Enough solution of sulphate of copper is added to give the liquid a bluish white tint.

After allowing the objects to be bleached to lie for several days, they are rinsed with water.

To Remove Ink-Stains from Carpets.—Bœttger recommends the use of a concentrated solution of sodium hypophosphite for the removal of ink from woven tissues. Recent stains should be thus easily removed, old ones must be rubbed with the solution for some time. For old ink-spots the carpet may be moistened with hot water (and, if convenient, kept over boiling water), and finely powdered oxalic acid rubbed upon the spot. Ammonia water should be in readiness, and the acid neutralized if the original color of the carpet is affected. In the case of marking-ink stains, the fabric may be soaked in a solution of calcium chloride and rinsed in ammonia water. —*Weekly Drug News.*

Detection of Tartaric in Citric Acid.

ACCORDING to H. Athenstädt, lime-water may be used as a very delicate test for this purpose. But it is necessary that the lime-water be fully saturated, so that 100 C.c. of it require *not less than* 4.8 C.c. of standard volumetric hydrochloric acid.*

0.5 Gm. of the citric acid are dissolved in 10 Gm. of water, and of this solution 5 drops are carefully added to 15 Gm. of the lime-water. Even if only traces of tartaric acid were present, a distinct turbidity will be noticed after a few seconds, which becomes more intense as the drops of the acid solution diffuse through the lime-water and becomes mixed with it. Shaking of the test-tube must be carefully avoided.

If as small a quantity as one per cent of tartaric acid is present, the above test will certainly detect it.

The author found seven different samples of citric acid, obtained from different drug houses, to show undoubted traces of the presence of tartaric acid. And he is even inclined to coincide with the assertion made by a very respectable firm that citric acid, entirely free from tartaric, is not to be found in the market at all. [This assertion is rather too bold, in our estimation.—ED. A. D.]—*Arch.d. Pharm.*

Artificial Heliotropin, or Piperonal.

THIS substance, now playing an important rôle in perfumery, is prepared in the following manner.

Piperin is first prepared by the usual method from pepper (preferably white pepper), and converted into piperate of potassium, by boiling it for twenty-four hours with an equal part of potassa and 5 parts of ordinary alcohol. This is then dissolved in 40 to 50 parts of hot water, and the hot solution slowly mixed, under constant stirring, with a solution of 2 parts (that is, twice the weight of the piperate of sodium) of permanganate of potassium. The resulting magma is put on a strainer and repeatedly washed with hot water, until it no longer has the characteristic odor of heliotropin. The united liquids are now distilled, and from the first portions of the distillate, which are caught separately, the larger portion of the heliotropin or rather piperonal ($C_8H_6O_3$) separates, on cooling, in crystals; the remainder may be obtained by shaking the distillate with ether.—After *Chem. Zeit.*

Manganese Varnish.

ONE of the best and most valuable varnishes is that which is prepared with certain oxides or salts of manganese, particularly the borate. 2 parts of perfectly dry and white borate of manganese (free from iron), reduced to an impalpable powder, are gradually mixed with 10 parts of linseed oil, heated in a suitable vessel and thoroughly incorporated by continuous stirring. The heating is continued until the oil has acquired a temperature of about 200° C. It is to be observed that borate of manganese yields a rapidly drying varnish only if completely from iron. Next, 1,000 parts of linseed-oil are introduced into a kettle and heated until bubbles arise; to the hot oil, the previously prepared mixture of manganese borate and oil is added, in a thin stream, after which the heat is increased and the mixture raised to a brisk boil, for about twenty minutes. The varnish is then finished and may be dipped out. It should be strained through cotton, while hot.—*Metallarbeiter.*

* One gramme of pure, freshly ignited carbonate of sodium requires for complete saturation 18.868 gm. of this acid.

Preparation of Metallic Zinc Free from Arsenic.

ACCORDING to Prof. F. Stolba, zinc entirely free from arsenic and nearly free from iron may easily be obtained from the crude metal if it is exposed simultaneously to the action of the vapor of sulphur and of steam in such a manner that the melted metal comes in contact with the vapors while it is at the bottom of the crucible.

Plaster of Paris is intimately mixed with about one-fourth of its weight of powdered sulphur, and the mixture made into a thick dough with water. This dough is formed into balls of about five *cm.* (two inches) in diameter, and the balls are then, while still moist, stuck upon long wooden sticks, of suitable thickness, so that they will firmly adhere when dry. They are now ready for use.

The impure metal having previously been melted in a crucible, one of the prepared balls is pushed down into the melted mass so that it will touch the bottom. A copious evolution of sulphur vapor and steam then takes place at once, so that it is necessary to use some caution, since the metal is set into a violent motion. When the latter ceases, the ball is removed, the outer crust removed, and the operation repeated until the impurities are removed. It is best not to use more than one kilo (two and one-fifth pounds) of metallic zinc for one operation.

So far as the removal of arsenic alone is concerned, Prof. Stolba found that steam alone, or the vapor of sulphur alone will effect it, but any accompanying iron is best removed by employing the two agents together.—*Pharm. Zeitung.*

Condurango.

SOME years ago we had reason to hope that this much-vaunted "remedy" for cancer has been finally banished from the medical armamentarium, in view of the almost unanimous reports as to its utter uselessness. We were rather surprised when we found that the German Pharmacopœia commission had incorporated the drug in the new German Pharmacopœia, published towards the end of 1882. Since then we have heard but little of it, until lately, when the results of the experience of Dr. A. Hoffmann, in Basle, were published (*Schweiz. Wochensch. f. d. Pharmacie*, 1882, No. 4). This practitioner claims that, of 108 carcinomatous patients treated *without* condurango, 9.1% improved, 25% remained stationary or progressed, and 64.8% died during the years of 1871–1881. During the past three years, twenty other patients were treated with condurango; 40% of these were improved, 10% remained uncured, and 50% died. According to Dr. Hoffmann, it is necessary to employ only the condurango from Ecuador (from *Gonolobus Condurango*), and to avoid that from Venezuela, which has a sharp, pepper-like taste, and is repulsive to the patients.

Cement for Caoutchouc.

POWDERED shellac is soaked in ten times its weight of stronger water of ammonia, whereby a transparent, gelatinous mass is produced, which is afterwards melted by placing the vessel in hot water. (It is also stated that the mass becomes liquid of its own accord, on standing for some weeks.) When using the cement, the surfaces of the caoutchouc are coated with some of the liquid mass and then firmly pressed together. As soon as the ammonia has evaporated, the caoutchouc joint hardens, and the points of union become as firm as the caoutchouc itself. The same cement is also stated to be suitable for fastening caoutchouc upon metal, glass, or other smooth surfaces. —*Polyt. Notizbl.*

The Maple Sugar Season.

IT is so easy to adulterate maple sugar with cane sugar or maple syrup with glucose that those who really care for the genuine article find it rather difficult to get. This was notably the case last year, when the weather was not propitious for a good deal of maple sap. The best conditions for a good sugar season are found when the ground has been deeply frozen by a severe winter, followed by a spring which commences to open early, but gives several weeks of alternate freezing and thawing, before the frost is all out of the ground; weather when it freezes quite sharply at night and thaws freely during the day, always gives a good "sap run." The following tables show the yields of maple sugar in the principal sugar producing States for the years 1870 and 1880 as given in the census reports of those years.

	1870. lb.	1880. lb.
Vermont,	8,864,302	11,261,077
New York,	6,692,040	10,693,619
Ohio,	3,469,128	2,895,785
New Hampshire,	1,800,704	2,731,745
Michigan,	1,781,855	3,423,149
Pennsylvania,	1,545,917	2,866,010
Indiana,	1,332,332	235,117
Total,	25,486,278	34,106,499

But the above table only includes those States producing over 1,000,000 pounds. The addition of the product of those other States which produce less than this amount annually would considerably swell the above total for 1880, and probably bring it up nearly, if not quite, to that of 1860, which was about 40,000,000 pounds, and the largest ever recorded. This, at an average of ten cents per pound, would give a value of $4,000,000.

Substitute for Ruby Glass.

MR. W. E. DEBENHAM makes use of a kerosene lamp giving a flame of a fair degree of brilliance, and glazed with green glass of a class having a somewhat rough appearance and now being extensively employed in church and other windows, in which the colored glass of a former epoch is being imitated. This green pane is supplemented by two thicknesses of pale orange paper, and the light it gives is very agreeable to work by, and not detrimental to the sight. On this latter subject, Mr. William Ackland, a clever surgeon oculist, of London, has said that the ruby light in general use in the dark room is proving exceedingly injurious to the eyes of photographers. —*Sci. Am. Suppl.*

Solubility of Strychnine.

P. CRESPI has determined the solubility of strychnine at ordinary temperatures and at 56°, 78°, and 98.5° in various solvents. He finds that 1 part of water at 14.5° dissolves 0.025 part of strychnine; that 1 part absolute alcohol dissolves from 0.302 to 0.325 at 8.25° and 10.75°; 0.975 at 56°, and 1.845 at 78°; that amyl alcohol, one of the best solvents, dissolves 0.525 at 11.75°, and 4.262 at 98.5°; that its solubility in dilute alcohol increases with the proportion of water up to 85° of Gay-Lussac's areometer, and diminishes at greater dilution.—*Gaz. Chim. It.*, 13, 175.

Neuralgia Pencils.

SO-CALLED neuralgia pencils are now being offered by a number of German pharmacists, especially in Berlin. They are said to consist essentially of a mixture of menthol, thymol, and eucalyptol, fused and cast in small conical pellets, which are fitted in a suitable handle. When the forehead and temples are touched with the pencil, a slight impression of burning is at first produced, and soon gives way to a pleasant, cool sensation. Several pharmacists claim priority in the invention. Friedlander exhibited neuralgia pencils at the late Vienna Exhibition, and a year ago "nerve crystals" were offered by Blaser, which were described in the *Pharmaceutische Zeitung* [See also NEW REMEDIES, 1882, p. 359] as consisting of a mixture of crystallized Japanese peppermint oil and camphor.—*Med. Record.*

Liebig's Infants' Soup.

ACCORDING to Meffdorsky (*Pharm. Zeitsch. f. Russ.*,, quoted in the *Rundschau*, this food can be thus prepared: Take 480 parts of freshly ground wheat flour, not the finest; 480 parts of ground malt; 15 parts bicarbonate of soda; mix with 960 parts of water and 4,800 of milk. Stir well over a gentle fire till the mixture begins to thicken. Then remove the mixture and stir well for five minutes. Heat again, and when it next begins to thicken, raise the heat till the mixture just begins to boil. Then pass through a fine strainer so that the husks may be removed. The food is sweet enough without additional sugar. It will keep for twenty-four hours.—*Chem. and Drug.*

Tamar Indien.

ACCORDING to the *Repert. de Pharmacie* of July last, the formula for making tamar indien is as follows:

Tamarind Pulp	450 parts.
Powdered Sugar	40 "
Powdered Sugar of Milk	60 "
Pure Glycerin	50 "

Mix and evaporate to the consistence of a soft extract. Then add:

Powdered Senna leaves	50 parts.
Powdered Anise	10 "
Essence of Lemon	3 "
Tartaric Acid	3 "

Mix and divide into 100 boluses. Strain them and roll in the following mixture:

Cream of Tartar	5 parts.
White Sugar	35 "
Sugar of Milk	35 "
Tragacanth	2 "
Tartaric Acid	2 "
Powdered Red Sandal	25 "

Dry, and put up in tin foil.—*Boston Med. and Surg. Jour.*

Reddened Carbolic Acid.

ACCORDING to Ebell, the crude crystalline carbolic acid contains substances which are colorless when pure, but some of which are changed by the action of air and heat—and still more by light—into non-volatile bodies, partly of a red, and partly of a yellow color. During the recrystallization, these substances remain in the residuary liquid. They are but slightly soluble in cold water, insoluble in benzin, but are dissolved by water containing sulphuric or phosphoric acid. On redistilling such a crude acid, the red coloring substance passes over with the first, and the yellow-coloring body with the last portions.—*Zeitsch. f. Anal. Chem.*

Action of Drugs on the Secretion of Milk.

M. STRUMPF'S observations on goats show that iodide of potassium diminishes the secretion of milk, the proportion of fat being also decreased. Alcohol increases the proportion of fat, but neither alcohol, morphine, pilocarpine, nor preparations of lead exerted any influence on the quantity of milk. Salicylic acid increased slightly the secretion, and notably increased the proportion of sugar in human milk. Traces of lead were found in milk when administered internally.

Koussinate of Sodium.

ONE of the most effective combinations of koussin is that with soda, which is obtained in the following manner:

Any desired quantity of koussin is dissolved in boiling water and bicarbonate of sodium is added until solution is effected. The solution is boiled a few minutes with a little animal charcoal, and then filtered. The resulting clear, and but slightly colored solution is evaporated in a porcelain capsule to dryness, at a gentle heat.

Koussinate of sodium is an amorphous powder, slightly hygroscopic, of an intensely bitter taste, and a whitish to slightly yellowish color. It is soluble in cold and still more soluble in hot water; also easily soluble in alcohol, excepting a little excess of bicarbonate of sodium, which is present. Being so readily soluble, it can be given in all forms, and is said to be a most effective agent against tænia and round worms.—*Bol. Farm.*, 1883, 319.

Phosphorated Solution of Albuminate of Iron.

L. FEICHTMAYER proposes to prepare this compound in the following manner:

The white of one egg (which should be as fresh as possible) is dissolved in 500 grammes of distilled water, the solution mixed with ten grammes of ethereal tincture of chloride of iron, decolorized by light, and finally with four drops of a one-per-cent solution of phosphorus in ether.

If the preparation is not needed immediately, it should be allowed to stand for twenty-four hours and then filtered.—*Pharm. Centralh.*

We give the formula merely as a piece of information; regarding the usefulness of the preparation we have strong doubts.

Solubility of Phosphorus.

BY means of converting the phosphorus dissolved by a given quantity of ether into phosphoric acid and determining the latter as ammonio-magnesian phosphate. A. Peltz ascertained the rate of solubility of phosphorus in ether. He found that ether of the sp. gr. 0.731, when shaken for one hour with phosphorus, dissolved 0.9783 per cent of the latter, and ether of sp. gr. 0.721, 0.9643 per cent.

100 parts of ethereal solution of phosphorus, therefore, contain almost exactly 1 part of phosphorus. For preparing the solution it is best to take finely granulated phosphorus, such as is obtained by melting in alcohol at 45° C. and shaking.

300 parts of alcohol of 95% dissolve 1.46 parts of phosphorus.

Glycerin dissolves only traces. From a solution of phosphorus in oil of turpentine, a white crystalline mass (turpentine-phosphorous acid of Schimff and Koehler) is gradually separated.—*Pharm. Zeit. f. Russl.*

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DIE PFLANZENSTOFFE, in chemischer, physiologischer, pharmakologischer und toxikologischer Hinsicht. . . . Von DR. A. HUSEMANN, DR. A. HILGER, und DR. TH. HUSEMANN. *Vierte Lief.* 8vo. Berlin (Springer). *12 marks.*

[The Proximate Principles of Plants, etc.]

IN previous issues (see NEW REM., 1882, pp. 27 and 92), we have already drawn attention to the new edition of this important work of reference, which is so well known that it really needs no special introduction. The last and concluding part (Vol. II., p. 2) has just reached us, and we are now in a position to realize the large amount of labor involved in the recasting of the book. The arrangement is now according to the natural families, which has some advantages, though it necessitates more frequent reference from one article to another. The recent literature, both chemical and pharmacological, has been very thoroughly abstracted, and references are quoted in full, so that it is easy to determine from what date any additional information that may be desired will have to be searched for in journals or publications issued more recently.

It would be impossible to review a work of this kind, in the ordinary sense of the word. The use of proximate principles in medical practice becomes every year more extended, and a thorough acquaintance of the chemical and physiological history of each of these principles, so far as known at present, is of the greatest importance.

No progressive physician of our day, and no live pharmacist can afford to do without a comprehensive and exhaustive work like the present.

SUPPLEMENT ZU DER ZWEITEN AUSGABE DER PHARMACOPŒA GERMANICA. Für Apotheker, Aerzte, Medicinal-Beamte, Drogisten. Von DR. B. HIRSCH, Apotheker. 8vo. Berlin, 1883, pp. 718.

FROM the above work we have already given a few extracts (see pp. 64, 66, 73 of this journal), which will enable our readers to judge for themselves of its value. It embraces the important drugs, chemicals, and preparations omitted in the new German Pharmacopœia, but in use in Germany or in other countries. The new U. S. Pharm. has furnished a considerable number of additions.

Each article is treated in the strict descriptive and precise manner in which the officinal articles are treated in the Pharmacopœia. Wherever feasible, a commentary is added, in which references to other pharmacopœias frequently occur. The work contains very many valuable practical hints, and its acquisition will be found a very profitable investment—profitable both scientifically and financially.

THE VEGETABLE MATERIA MEDICA OF OF WESTERN INDIA. By W. DYMOCK, Surgeon-Major Bombay Army, etc. Part V. (conclusion). 8vo. Bombay, 1884.

THIS important work, which we have several times mentioned in our columns (see particularly NEW REM., 1883, p. 318), has been completed some time ago, and is now available to all who are interested in materia medica and its history.

Regarding the merits of the work, there is only *one* voice, and that is, that it supersedes the whole of the literature touching the subject issued previously. It is, therefore, one of those works which are absolutely necessary for reference. A great portion of the information afforded by it is historical, derived from native sources which had never before been laid under contribution. Even the commercial features (available supply, market price, etc.) of most of the drugs are recorded. In some places, the author appears to lean towards the belief that the Sanskrit treatises on medicine (by Susruta, Charaka, etc.) are quite ancient. This view is, however, not any longer entertained by the majority of competent judges. We regret that the author found it impracticable to give in the index the Oriental characters of those names, the true spelling of which (in Arabic, Persian, etc.) cannot with certainty be known from the English-spelled name. It would have rendered the work still more valuable to Oriental scholars.*

DRUGS AND MEDICINES OF NORTH AMERICA. A Quarterly devoted to the Historical and Scientific Discussion of the Botany, Pharmacy, Chemistry, and Therapeutics of the Medicinal Plants of North America, their Constituents, Products, and Sophistications. By J. U. LLOYD (Commercial History, Chemistry, and Pharmacy), and C. G. LLYOD (Botany and Botanical History). 8vo. Cincinnati: 1884. $1.00 per year.

WE have already announced the above work in a preceding number. The first issue now lies before us. The authors begin, as is usual in botanical works, with the Ranunculaceæ, and have included in this present number the following plants: *Clematis virginiana* L. (four illust.); *Thalictrum dioicum* L. (one ill.); *Thalictrum anemonoides* Mich. (two ill.); *Anemone nemorosa* L. (three ill.); *Anemone patens* L. var. *Nuttaliana* Gray (three ill.)

These subjects have been treated in a very exhaustive manner, all the accessible literature having been carefully collated, and a large amount of original information derived from the experience of the authors or from contributions of correspondents and co-laborers having been incorporated. From the method in which the above, perhaps less important articles have been treated, we may expect very interesting and valuable accounts of the more important drugs, some of which will be reached in the next number. As the authors are compelled by their plan to treat of all American plants that have ever been used medicinally, it must necessarily follow that important ones will alternate with those of lesser value.

The work is gotten up in excellent style, on good paper, and with very good illustrations (part of them full-page), in which special pains have been taken to delineate the parts correctly according to nature.

An extract from this number will be found in this journal on page 81.

ELEMENTS OF PHARMACY, MATERIA MEDICA, AND THERAPEUTICS, by WILLIAM WHITTA, M.D., etc. With lithographs and woodcuts. Second edition. London: Henry Renshaw, 1884.

THIS is a manual for the pocket, and contains the essential knowledge of the branches to which it relates in a form that is especially adapted for medical students.

Part first, relating to pharmacy, should be familiar to all physicians, whether they have occasion or not to dispense medicines.

In part second, under the head of Materia Medica, are briefly described most of the articles used in medicine in Europe or America, the important preparations of each being mentioned.

Part third: Therapeutics, is quite complete for a work of this class and is followed by a chapter upon remedies not official in the British Pharmacopœia, although many of them are quite important and some are officinal in the U. S. Pharmacopœia.

The chapter on the Administration of Medicines contains, among other matters, instructions for prescription writing, and rules to prevent incompatibilities.

Although in many of its details the work is better adapted for British students, owing to differences between the weights and measures used there and here, and the fact that it is based upon the British Pharmacopœia, there are many ways in which it would prove valuable for American students.

* In reply to a query received by us concerning the Oriental distich on the title-page, we have to say that it is from a poem in praise of God, by the celebrated Persian poet Sa'di. The verse is well known to Persian scholars owing to an abnormal plural-formation, only once indulged in by the author. It reads thus:

Berg(i) dirachtân sebz der naçar(i) hûshyâr
Her varakî defterist ma'rifat(i) kirdgâr.

"The foliage of green trees, in the eyes of the intelligent,
Is, each leaf of it, a book of the knowledge of God.'

A COMPANION OF THE UNITED STATES PHARMACOPŒIA: Being a Commentary on the Latest Edition of the Pharmacopœia and Containing the Descriptions, Properties, Uses, and Doses of all Officinal and Numerous Unofficinal Drugs and Preparations in Current Use in the United States, together with Practical Hints, Working Formulas, etc. Designed as a Ready Reference Book for Pharmacists, Physicians and Students. With over 650 original Illustrations. By OSCAR OLDBERG, PHAR.D., etc., and OTTO A. WALL, M.D., PH.G., etc. New York: William Wood & Co., 1884, pp. 1220, 8vo.

THE appearance of this work has for some time been expected, and the reason for the delay can be appreciated after a consideration of its size, and the number and originality of its illustrations. It differs from either of the dispensatories in containing fewer references to articles but little used, and in having more brief therapeutic sections. It is especially strong in the department of pharmacognosy, the chapter on the Microscopical Structure of Plants bring particularly noteworthy. It is liberally provided with the tables likely to be useful for the pharmacist. While it includes a great deal of matter relative to non-officinal articles, it is really what its name would imply: a companion or commentary on the Pharmacopœia, furnishing, in greater detail, information which could not reasonably be included in a work aiming at the establishment of standards for identity and purity.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for information respecting an unusual or proprietary compound, always accompany the query with all the information you may possess respecting it, and, when it can conveniently be done, send a specimen of the label.

No. 1,276.—**Mellin's Food** (Dr. A. S. W.).

We have had occasion to inspect a recent analysis of Professor Fresenius, of Wiesbaden, of this article, and here give an abstract of his results.

The preparation is a moderately-fine, yellowish-white, hygroscopic powder. It is not completely soluble in water, but is almost completely so—with the exception of a trace—in the stomach. The constituents are as follows:

I. Soluble in water: Non-nitrogenized, organic.		
Maltose and Dextrose (33.46+35.92).....	69.38	
Nitrogenized, organ.		
Albumen (2.13), Peptone (0.87), Amides (1.69)	4.69	
Inorganic.....	4.23	
		78.30
II. Insoluble in water, but almost completely dissolved in the stomach: Non-nitrogenized, organic.		
Fat (0.08), Cellulose, etc. (3.10).....	3.18	
Nitrogenized, organ.	5.06	
Inorganic.....	0.14	
		8.38
III. Water, including loss by drying at 120° C.		13.32
		100.00

As a matter of analytical interest, it may be added that the albuminoids were determined by Prof. Fresenius in the following manner: The albumen is calculated from the nitrogen of those nitrogenized substances which are precipitable by cupric hydrate in a solution containing a slight excess of acetic acid. The calculation is made by multiplying the nitrogen with 6.25. The peptones are found in a similar manner by calculation from the nitrogen obtained from the precipitate produced by phosphomolybdate of sodium in the filtrate from the preceding operation, after acidulating with hydrochloric acid. The amides result from the difference of the sum of nitrogen of the protein-bodies, peptone and that obtained from the nitrogenized substances insoluble in water on the one hand, and the total nitrogen on the other hand. Of the 9.75% of nitrogenized constituents, only 0.2% were found to be insoluble.

No. 1,277.—**Matschalka** (E. S.).

From recent exchanges we learn that this is a substitute for sponge, its synonym being given in the announcements as "Caucasian washing sponge." It is a Russian word, denoting a bunch of linden bast used for scouring bathtubs, sinks, etc., or for whitewashing walls. It is commonly used as packing material. This name appears to have been applied to the new substance ("Caucasian washing sponge") probably because it has some similarity with it. According to Professor Wittmack, it "is derived from bananas," and is perhaps plain banana fibre (see *St. Petersb. Med. Wochensch.*, 1884, No. 4). Hanausek states that Professor Wittmack pronounced it to be probably obtained from the refuse of manila hemp (*Musa textilis;* see *Bot. Centralbl.*, 1884, No. 10). It is reputed to have antiseptic properties, and "to be unable to take up septic matter." This claim, of course, is more than doubtful.

No. 1,278.—**Testing Extract of Malt for Diastase** (B. W. S.).

The presence of diastase in extract of malt is, in itself, not necessary for the assimilation of the extract, but is of benefit in aiding any farinaceous or starchy food which it may come in contact with in the stomach, to be converted into sugar. It is, besides, a good criterion that the extract has been made at not too high a temperature, and probably in a vacuum apparatus, which circumstances always result in a more satisfactory product than if it is made in open vessels, and at a high temperature.

The quantity of diastase in a given extract of malt may be determined, according to Dunstan and Dimmock, by ascertaining how much starch it is capable of transforming into dextrin and glucose or maltose. Proceed as follows: Dissolve 0.1 Gm. of starch in 100 C.c. of hot water, and add to the solution 10 C.c. of 10-per-cent solution of the extract of malt. In a second flask, dissolve 0.1 Gm. of starch in 100 C.c. of hot water, and add 20 C.c. of the same solution of the extract. Then expose both mixtures, on a water-bath, to a temperature of 35° to 40° C., for three hours. Now place a few drops of the liquid upon a plate of glass, and add to it a drop of solution of iodine in iodide of potassium. A blue color would show that the starch has not yet been completely converted into maltose. If this conversion is complete in the first, but incomplete in the second, the experiment must be repeated with say 12 and 18 C.c. of the 10% extract solution; or else, 2 C.c. of this solution at a time may be added to the first flask, and the manipulation repeated. Supposing 15 C.c. of the 10-per-cent extract solution had exactly converted the 0.1 Gm. of starch into dextrin and sugar, then we may express this by saying: 1 part of starch requires for saccharification 15 parts of the extract of malt (see *Arch. d. Pharm.*, 1879, ii., p. 468). Since 1 part of diastase is capable of transforming 2,000 parts of starch into sugar (best, at a temperature of 75° C.), it would seem to be most useful to ascertain the quantity of starch which can be converted by 100 parts of extract of malt. Hager (who proposes this), says that the quantity required should be at least 10 parts, and proposes to word the test thus: 100 parts of extract of malt of ordinary extract-like consistence should be able to convert at least 10 parts of starch into sugar, by digestion, at a temperature of 50° to 60° C. during 5 hours. This would be an approximate limit, a sharp one not being possible, since the action of diastase, just like that of pepsin upon albumen, is not sharply defined, and is dependent upon time and temperature. The above test can be used for determining whether the extract has been prepared from malt or artificially, only if the solution of the extract has first been neutralized by a little carbonate of magnesium or calcium. [If the extract of malt were mere glucose, the trace of acid remaining in the latter would gradually act upon starch like diastase.] 4 parts of starch yield 3 parts of maltose and 1 part of dextrin. Above 65° C., more dextrin and less maltose is formed.

No. 1,279.—**Indelible Ink** (W. W. S).

We have stated several times already, that there is no ink which is absolutely indelible under any circumstances.

An ink which is altogether unaffected by chemicals is one having finely divided carbon as a base. Such is, for instance, India ink. But the trouble is, that this kind of ink remains on the surface of the paper, and may usually be removed by mechanical means.

Silver and other metallic indelible inks, of which we have given a number of formulæ heretofore, are likewise not absolutely indelible, though they resist for a long time, mechanical action (of the laundry, for instance).

One of the most indelible black inks, *upon paper*, is that which we have several times quoted already, and which was originally devised by Mr. Isidor Furst, member of the printing house which prints this journal. Its indelibility depends on the fact that when bichromate of potassium and gelatin come together, particularly in form of a thin film, in the presence of daylight, the film becomes insoluble in hot or cold water. A good formula is the following:

Gelatin.....	2 grains.
Bichromate of Potas.	2 "
Nigrosine.....	10 "
Water.....	1 fl. oz.

Dissolve the gelatin and the nigrosin in most of the water, and the bichromate of potassium in the remainder. Mix the two solutions in an amber-colored bottle.

If it is found that the ink "gums" in the pen, the quantity of gelatin and bichromate may be somewhat reduced.

But the ink, when properly made, and dry, cannot be entirely removed from paper by hot or cold water, acids, or alkalies.

No. 1,280.—**Cologne** (J. A. & Co.).

This correspondent asks us to give a formula for a cologne which will be similar to Hoyt's.

There are many brands of excellent cologne in the market, all of which have some special, distinctive odor. Some of them approach each other quite closely, others again are quite different. We have frequently given formulæ for colognes, but we are not aware of any combination which will produce the exact flavor or even a very close approximation to the flavor of Hoyt's (or, for that matter, of some other prominent makers). It would require a long series of experiment, with rather costly materials, to hit upon the proper ingredients and their proportions.

We are at all times willing to supply the best formulæ in our possession for the most varied purposes—and we have extensive files at our disposal—but we would not be willing to publish broadcast the private formula of a manufacturer of *non*-medical products, *even if we knew it*, since this is his exclusive property, acquired by much expenditure of time and money, and, in fact, constituting a very considerable part of his capital. We do not, of course, interpret our correspondent's request as having had this tendency, but we merely take the opportunity of again stating our views of the extent to which the publication of manufacturers' private formulæ would be justifiable or not. With the manufacturers of secret remedies or nostrums we have no sympathy or affiliation. If these formulæ come to our knowledge and are demanded in the interest of pharmaceutical morals, we will never hesitate to furnish them, though we cannot spend the time to analyze them ourselves, merely for satisfying curiosity.

No. 1,281.—**Starch Polish or Gloss** (W. W. S.).

A good formula is the following:

Mix intimately 435 parts of wheat-starch, 85 parts of borax, 10 parts of common salt, 75 parts of best gum Arabic, and 275 parts of stearin (stearic acid), all in fine powder. To reduce the last-named article to powder is somewhat difficult, and the originator of the formula (Friese of Braunschweig) proposes, therefore, first to comminute the stearic acid upon a grater, and then to triturate it, in a mortar, with benzin, until it is a dry powder. Hager advises to first melt the stearic acid in a capsule, then to introduce the starch, previously dried and powdered, and, after thoroughly mixing, to cool the mass to about 5° C., in an ice-box, after which it may be reduced to powder in a mortar, and mixed with the other ingredients.

The quantity of stearin in the preceding formula is really larger than is required; but we quoted the process nevertheless, as it appears to be indorsed by judges.

The above preparation, of course, is intended to be used merely as an addition and aid to the ordinary starch in the starching process.

Usually, the quantity of stearin (or of wax, which many use) required to be added to ordinary starch need not exceed 1 part in about 120. A mixture of this kind may be kept ready by melting 1 part of stearin, adding about 15 or 20 parts of starch, cooling, powdering the mixture, and then incorporating with enough plain starch to make 120 parts.

No. 1,282.—**Estimation of Licorice** (A. E.).

This depends upon the quantity of glycyrrhizin contained in it. In general, the process of the U. S. Ph. for preparing ammoniacal glycyrrhizin accomplishes the object. But for assay-purposes, it is best applied as follows (according to Hager):

A portion of the licorice (extract) is cut into small pieces, which are thoroughly died, in order to ascertain the percentage of water. Another portion of 10 Gm. is cut small, put into a beaker, covered with 30 C.c. of water of ammonia (of 10%), and dissolved by stirring. If time is an object, the licorice may be dissolved in 15 C.c. of water at 35° to 50° C. and 15 C.c. of stronger water of ammonia (20%) then added. The solution must be complete without any visible residuary fragments or granules. Small portions of alcohol (of 90 to 92%) are now successively added at first, and afterward enough of the same alcohol to make the whole measure 110 C.c. After precipitation is completed, the liquid is allowed to settle and then filtered. The residue in the filter is washed with a mixture of 30 C.c. of water of ammonia and 110 C.c. of alcohol, until the washings appear, at most, only pale yellowish. The residue on the filter is collected with a spatula, and fully dried in a capsule. In a good specimen of licorice, this residue amounts to 50, in a very good specimen to 40 per cent. The filtrate is deprived of alcohol, first by filtration, and afterwards by evaporation in a capsule, until it forms a thick syrup. This is now mixed with 10 C.c. of glacial acetic acid and enough absolute alcohol to make it measure 150 C.c. After a few hours, the precipitate is collected on a tared filter, washed with absolute alcohol, dried and weighed. If a little glycyrrhizin has become adherent to the walls of the vessel, the latter is dried, when the crust may be removed with a knife. Instead of trying on the filter, the glycyrrhizin may also be transferred to a capsule and weighed there. Towards the end, the drying must be conducted at 115° C. The weight of the dry glycyrrhizin should be, at least, 1.3 Gm. or 13% of the licorice, calculated as dry. In licorice of good quality it amounts to 15 per cent. This glycyrrhizin is not quite pure, containing about 5 per cent of impurity, but for practical purposes the result is reliable enough. If the liquid, from which the glycyrrhizin has been precipitated, is evaporated to dryness, the clear brown residue consists of extractive matter and sugar amounting to about 35% of the dried licorice. If it amounts to only 30% or less, the licorice may be regarded as inferior.

No. 1,283.—**Troublesome Ointment** (Subscriber).

This correspondent asks how the below-mentioned prescription can be filled so that it will remain soft, like an ointment. He has tried it several times, but it always became hard.

The prescription is as follows:

Iodoformi	5.0
Zinci Oxidi	10.0
Bals. Peru	10.0
Ol. Cadini	15.0
Ung. Petrolei	30.0

Misce. Ft. ungentum.

Iodoform loses its odor when mixed with balsam of Peru. There can be hardly any doubt that it is at least partly decomposed, but the rationale is not known. When oxide of zinc and balsam of Peru are triturated together, the mixture, after a time, becomes stiff and tough, probably owing to the formation of cinnamate of zinc. This is the only reason which occurs to us just now, for the fact that the ointment becomes stiff. We find also that it has a tendency gradually to become lumpy. It begins to look as if some extract had been imperfectly rubbed up with some ointment, being full of blackish specks and flakes. These are, probably, derived from the Balsam, after it had undergone decomposition.

We find that the hardening and disintegration may be prevented, or at least greatly retarded, by incorporating a little olive oil, before adding the petroleum ointment. About 5 or 10 Gm. will suffice.

Formulæ asked for.

Some of our correspondents ask for the composition of the following proprietary articles. Perhaps some of our readers can furnish one or the other:

1. Cuticura Remedies.—2. Hoofland's Tonic.—3. Hamilton's Malarial Specific.—4. Warner's Safe Kidney and Liver Cure.—5. McAllister's Cough Mixture.

THE Swedish Government intend to establish a botanico-physiological station in the north of Sweden, for the study of the flora and the diseases of the crops in that part of the country.

NEW PATENTS.

[Complete specifications and illustrations may be obtained of any one or more of the following patents by sending the number, title, name of patentee, with twenty-five cents for each copy, to the Commissioner of Patents, at Washington, D. C., together with the name and address of the person requesting the same.]

294,858. *Paper Wrapper.*—Dundas Dick, New York, N. Y.

294,876. *Ointment for Tetter.*—Manlius Huggins, Waynesboro, Miss. Consists of chrysophanic acid, pure glycerin, oil of sassafras, laudanum, and vaseline.

295,009. *Bottle-Filling Device.*—Philip J. Hogan, Negaunee, Mich.

295,078. *Remedy for Hernia.*—Edward C. Thatcher, Kansas City, Mo. A compound consisting of glue, sugar, honey, gutta percha, glycerin, borax, alum, sulphur, black-lead, nitrate and bitartrate of potash, and camphor, mixed and formed into pads, and adapted for use with a portable electric element.

295,220. *Manufacture of Fly-Paper.*—Edward F. Baker, Chicago, Ill., assignor to Margaret M. Baker, same place.

295,222. *Toilet-Case.*—Hart O. Berg, New York, N. Y.

295,276. *Vaginal Irrigator.*—Aaron Palmer, Rochester, N. Y.

595,358. *Perfumery-Charged Cane and other Handles.*—Ezra R. Cowles, Henry A. Cowles, and Martin Osborne, Westfield, Mass.

295,633. *Removing Oleine from Linseed Oil.*—Thomas Henry Gray, Brooklyn, N. Y., assignor of one-tenth to John Leavens, same place.

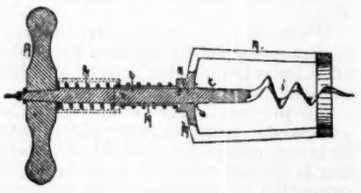
295,721. *Cutter for Wires and Cords of Bottles.*—John Bevins, and Amedy Propst, New York, N. Y.

295,755. *Vaginal Syringe.*—James A. Hawley, Canadaigua, N. Y.

295,798. Speculum.—George W. Pagett, Oxford, Ind.

295,825. *Manufacture of Parachinanisol.*—Zdenko Hans Skraup, Vienna, Austria Hungary, assignor to Badische Anilin and Soda Fabrik, Manheim, Germany.

295,876. *Antiseptic Solution.*—John F. Kennedy, Boston, Mass. Composed of water, alum, granulated sugar, saltpeter, and gum-arabic.



295,962. *Cork-screw.*—Alvis J. Walter, Philadelphia, Pa. A cork-extractor having a screw, a handle, and a yoke or frame, a spring bearing against said frame and handle whereby, as the screw is driven into the cork, said spring is compressed and exerts its resultant increased pressure to cause the automatic withdrawal of the cork.

296,260. *Apparatus for the Manufacture of Bicarbonate of Soda.*—Charles Wigg, Liverpool, County of Lancaster, England.

296,435. *Decanting Pump.*—Elvin O. Murdock, New York, N. Y.

296,452. *Washing Compound.*—Annie E. Rhoads, Barboo, Wis. Consists of sal-soda, saltpeter, and gum-camphor.

296,661. *Combined Cork-Screw and Key-Ring.*—Wilber B. Woodman, Newark, N. J.

296,673. *Combined Water Filter and Cooler.*—Frank E. Cady, Auburn, N. Y.

ASSOCIATION AND COLLEGE NOTES.

New York.—The pharmacists of Delaware County, at its initial meeting in Delhi, on the 10th of April, elected G. J. Sullard, *President;* L. E. Howard, *Vice-President;* F. L. Norton, *Secretary;* and W. Winter, *Treasurer.* The next meeting will be in June.

The pharmacists of Buffalo (Erie Co.) are taking steps to secure an organization for mutual protection, similar to the one recently established in New York City.

The annual dinner of the Alumni Association of the New York College of Pharmacy was held at Martinelli's, on Thursday evening, April 3d. About fifty gentlemen were present.

Toasts were responded to by Dr. H. J. Menninger, Prof. P. W. Bedford, Messrs. L. M. Royce, B. F. Hays, Fred. Hohenthal, and President Ewen McIntyre. Several songs were rendered by Mr. G. J. Seabury, in a very acceptable manner.

The New York College of Pharmacy held its annual dinner at Delmonico's, on Tuesday evening, March 25th.

Letters of regret were received from President Arthur, Gen. Grant, Prof. W. De F. Day, Hon. R. P. Flower, Judge Brady, Rev. H. W. Beecher, and many other prominent gentlemen.

Nearly all the leading wholesale druggists of New York were represented at the dinner, as were also the more prominent pharmaceutical journals.

Toasts were responded to by President McIntyre, Dr. Meninger, Prof. Chandler, Messrs. Seabury, Gellatly, and Robbins, and the Rev. Dr. Pullman.

The dinner proved to be a very enjoyable affair, reflecting great credit upon Messrs. Macmahan, Atwood and Balser, who composed the committee of arrangements.

The New York Protective Association of Drug Clerks held its second meeting on Wednesday, March 26th, in the College of Pharmacy building. About forty gentlemen were present. The only business of importance transacted was the discussion and suspension of the second clause of the by-laws which we published in our April number.

Twenty-three new names were added to the roll of members, and about $100 were subscribed to defray legal expenses incurred in prosecuting pharmacists who employ as prescription clerks those holding no licenses.

The next meeting was held on Sunday afternoon, April 6th, at the same place. Thirty-five members were present.

The Executive Committee reported that they had secured as attorneys to the association Messrs. Evarts, Southmayd and Choate, and that they had obtained a charter.

Owing to the small attendance, no business was transacted and the meeting adjourned to Friday, April 25th.

The German Apothecaries' Association held its "Calico-Krænzchen" at Beethoven Hall, on Thursday evening, April 17th. The floor was well filled and during the twenty-four dances, universal enjoyment reigned.

The New York Druggists' Union continues to meet at the College of Pharmacy. Although the meetings are not so largely attended, the interest taken does not seem to have abated.

Iowa.—The fifth annual meeting of the Iowa State Pharmaceutical Association will be held in Masonic Temple, Marshalltown, beginning May 27th, at 10 o'clock A.M.

The local secretary writes: "Our hall is 100x100 feet. In the centre is a room that we shall use for the convention, 36x54 feet, and on the north, south, and west are large rooms, well lighted and very well adapted for exhibition purposes."

The close proximity of the assembly and exhibition rooms affords attending members ample time to see the exhibits before and after the sessions of the association, and as some twenty firms have already signified their intention to be represented in the exhibit, and many more are expected, this feature of the meeting promises to be unusually interesting and profitable.

A sufficient number of papers, in reply to queries, and volunteer essays are expected, to contribute to this meeting unusual professional interest.

The convenient location of the place of meeting—Marshalltown being easily reached from nearly all parts of the State; the favorable season of the year; the exigency of the time which, in view of recent legislation, gives especial importance to this meeting, as affording the members an oportunity to discuss the situation of the pharmacy law, especially as relating to the sale of liquors, should conduce to bring together the greater part of the membership, and insure a good meeting.

The chairman of the Committee on Transportation is in receipt of notice from the following roads, granting a reduction of fare to one and one-third for the round trip (full fare going and one-third fare returning): Chicago and North-Western; Chicago, Burlington and Quincy; Chicago, Rock Island and Pacific; Illinois Central; Chicago, Milwaukee and St. Paul. Other roads leading into Marshalltown will probably make similar reductions.

Members having papers to present will please address the Chairmen of the Standing Committee as follows:

On Trade Interests—Mr. Milo W. Ward, Des Moines.

On Pharmacy and Queries—Mr. T. W. Ruete, Dubuque.

On Legislation—Mr. George B. Hogin, Newton.

On Adulteration—Emil L. Boerner, Iowa City.

All communications in reference to exhibits should be addressed to the local Secretary, Mr. C. J. Lander, Marshalltown.

Headquarters will be at the Tremont House. Rates, $2.00 per day.

Ohio.— At the twelfth annual commencement exercises of the Cincinnati College of Pharmacy, the degree of Graduate of Pharmacy was conferred upon the following gentlemen: C. S. Ashman, Charles J. Ertel, A. W. Flexer, W. H. Grothaus, A. F. Gwinner, O. M. Harter, L. A. Jeaucou, F. G. Kallmeyer, William Kiehl, Mrs. A. H. Merrell, Frank Meyer, O. L. Muench, B. J. Pardick, E. A. Rosenfeld, W. F. Schell, A. E. Schnittker, J. L. Schultz, E. D. Serogin, C. C. Seebohm, J. D. Stanton, B. E. Stehle, N. B. Taylor, L. A. Thilly, and Fred. Zimmerman.

Frank G. Kallmeyer received the gold medal; Leslie Soule won the silver medal.

The total number of students for the past year was one hundred and fifteen, thirty-five of whom were seniors.

Maryland.—The thirty-second annual commencement exercises of the Maryland College of Pharmacy were held in the Academy of Music, Baltimore, on Tuesday afternoon, March 25th. The degree of Graduate of Pharmacy was conferred upon the following gentlemen: Louis Bellerman, Charles Buschman, R. L. Brown, E. J. Bernstein, C. E. Davis, John A. Davis, Wm. C. Downey, Wm. L. Dunham, J. K. Eppley, C. W. Forrest, J. C. Groome, H. H. Hathaway, J. M. Hennick, George Kolb, L. F. Kornmann, E. E. Moyer, Chas. Mitzger, W. B. Orear, T. H. Richardson, Thos. K. Shaw, W. L. Sulzbacher, Geo. H. Stuart, Charles Shipley, Fred. Saultan, Conrad P. Strauss, Louis Schultze, P. P. Sappington, W. B. Taliaferro, J. C. Treherne, J. H. Woodcock.

The prizes were awarded as follows: First prize, a gold medal, to Conrad P. Strauss; second prize, to W. L. Sulzbacher; third prize to L. F. Kornmann.

The Simon analytical prize, a gold medal, was awarded to Fred. W. Saultan, and the practical-pharmacy prize to Thomas L. Richardson.

Pennsylvania.—The Pennsylvania Pharmaceutical Association, to meet at Wilkesbarre on the 3d of June, will be convened at Wood's Hall at 10 A.M. The headquarters will be at the Wyoming Valley House.

The Lancaster County Pharmaceutical Association have elected the following officers: *President*, Dr. H. B. Parry; *Vice-President*, J. R. Kaufmann; *Secretary*, A. A. Hubley; *Treasurer*, N. B. Cochran; *Executive Committee*, C. A. Heinitsh, T. B. Bechtold, Dr. M. T. Reeder.

The Pittsburgh College of Pharmacy held its fifth annual commencement on the evening of March 18th.

President George A. Kelly conferred the degree of Graduate of Pharmacy on the following successful members of the class of '84. D. F. Robinson, C. H. Beach, E. A. Shafer, W. S. Jones, A. M. Sorg, J. A. Koch, H. F. Thomas, Homer J. McBride, T. J. Russell.

The pharmacists of Luzerne Co. (Pa.) have organized a society which has been named "The Luzerne County Pharmaceutical Association."

At the meeting held March 28th, permanent organization was effected by the election of the following officers:

Dr. Avery Knapp, *President;* H. C. Chauce, C. M. Briggs and R. D. Williams, *Vice-Presidents;* W. D. White, *Secretary;* P. M. Barker, *Assistant Secretary;* and N. Wolfe, *Treasurer.*

The *Executive Committee* elected were Dr. Knapp, Messrs. Myers, Tuck, Evans, and Hollopeter.

The following resolution was unanimously adopted: *Resolved*, "That we are in full sympathy with the National Retail Druggists' Association and it is the duty of every member engaged in business for himself to give it its support by at once joining its ranks."

At the next meeting, held April 11th, a Reception Committee, consisting of Messrs. W. D. White, H. C. Tuck, N. Wolfe, M. F. Syphers and P. M. Barber, were appointed to provide for the entertainment of guests attending the meeting of the Pensylvania Pharmaceutical Association, to be held on June 3d and following days at Wilkesbarre.

The Alumni Association of the Philadelphia College of Pharmacy held its 20th annual meeting on March 17th. The following officers for the ensuing year were elected:

President, C. A. Weidemann, M.D., *Vice-Presidents*, W. R. Warner, Jr. and J. S. Beetens; *Treasurer*, E. C. Jones; *Recording Secretary*, W. E. Krewson; *Corresponding Secretary*, D. W. Ross; *Executive Committee*, Messrs. L. E. Sayre, and J. W. England.

The gold medal was awarded to John C. Falk, he having attained the highest general average of the class.

On the night of the 18th, a complimentary dinner was tendered the senior class by the Faculty.

The class presented the College with a life-sized portrait of Prof. Sadtler.

The 63d annual commencement exercises were held in the Academy of Music on the evening of March 19th. President Parish presided. Prizes were awarded to the following:

The Proctor prize (a gold medal) to F. X. Moerck, of Delaware; the Materia Medica and Botanical prize (microscope), to Harry L. Barber, Pennsylvania; The Remington Prize, to T. O.

Nock, Delaware; The John M. Maisch Prize, to Harry C. Cook, Ohio. Miss Grace Lee Babb, of Maine, received honorable mention, ranking sixth in a class of 150 graduates.

Massachusetts.—The State Pharmaceutical Association, which meets at Lowell on the 4th and 5th of June, will offer to exhibitors of objects of pharmaceutical interest, excellent opportunities for displaying their wares. Applications for space should be made at least fifteen days before the time for the meeting and should be addressed to the Local Secretary, Mr. G. C. Brock, to whom also goods should be consigned. Exhibits should be on the ground three to five days previous to the opening, to admit of proper arrangement. It is desirable that exhibitors should mention whether cases will be sent or not, and if so, whether they will require stands.

All articles must be in position previous to the opening of the exhibition on the 4th.

"Patents," "secrets," and "copyrights" are excluded.

A very enjoyable dinner and meeting was held at the Revere House, Boston, on the evening of March 26th, by the Boston Druggists' Association.

Rhode Island.—At the quarterly meeting of the Rhode Island Pharmaceutical Association, held in Providence on the 2d of April, the following new members were admitted: P. A. Fletcher, of Ashton; P. C. Lestonia, of Woonsocket; W. H. Garrett, E. C. Danforth, A. J. Myers, of Providence. During the ten years of the Association's existence its membership has increased from 29 to 126 members, 9 of which are honorary. The Association owes nothing, has $242 in the treasury, and credits to the amount of $169.50.

A committee of three was appointed, consisting of Messrs. D. J. Bruce, F. Smith, and E. H. Burdick to secure a better enforcement of the pharmacy law.

The next quarterly meeting will be at Newport, on the 2d of July, when the members and their wives will be entertained by President W. H. Cotton, who, by the way, has lately been appointed a member of the State Board of Pharmacy.

Illinois.—The Chicago College of Pharmacy, at its last commencement, granted fifty-six diplomas. The annual meeting of the College was held April 1st, at which the following were elected: *President*, Thomas Whitfield; *Vice-Presidents*, J. S. Jacobus, J. H. Wilson; *Secretary*, S. L. Coffin; *Treasurer*, T. H. Patterson; *Trustees*, G. M. Hambright, E. S. Bastin, George Buck, J. C. Borcherdt, E. K. McPherson, J. Conrad, H. Biroth, E. F. W. Henkel, E. H. Sargent, H. W. Fuller.

Mr. R. Rother, of Detroit, was elected an honorary member.

At the regular quarterly meeting of the Illinois State Board of Pharmacy, held at Chicago April 11th, the following candidates were successful in the examination: Charles Beck, E. C. Bargh, C. M. Briggs, G. E. Bauman, E. E. Day, C. L. Enslee, J. F. Forberich, J. W. Godfrey, J. S. Hays, H. J. Holthoefer, S. C. Kirk, H. B. Brown, O. J. Hartwig, William Hellstern, F. P. Kaun, Charles F. Judy, A. W. Baer, C. A. Earle, J. W. M. Eslaman, J. W. Garver, E. Kneuster, N. Lohman, Jno. Lynch, J. W. Morse, William Pittman, T. L. Porter, C. E. Reiss, S. P. Rogers, A. J. Riedel, C. S. Ross, J. R. Shean, S. C. Sexaner, M. R. Stuart, J. M. Smail, Eduard Shumpsik, John Stallings, L. S. Smith, F. L. Shinkle, F. M. Tyrrell, F. G. Waiss, E. H. Waltersdorf, and T. T. Wilson.

Seventy-eight candidates were examined.

Missouri.—The State Board of Pharmacy meet at Kansas City, on the 7th, 8th, and 9th of April; the board consisting of M. W. Alexander, of St. Louis; P. H. Franklin, of Marshall, and W. T. Ford, of Kansas City. Out of 70 candidates for license, 46 passed the examination and were registered, viz.

Arrow Rock.—W. F. Watts.
Brownington.—H. De la Vergne.
Butler.—W. C. McIrwin, J. T. Walls.
Carrolton.—I. W. Peckstein.
Car-Junction.—H. M. Brin.
Commerce.—C. L. Hameltars.
Fairfax.—C. W. Wheeler, Edward Springs, C. G. Hainline.
Fayette.—F. P. Hogan.
Fulton.—E. M. Balton, A. B. Jones, J. T. Pollard.
Green Top.—W. A. McKeacham.
Hummetal.—E. D. Garias.
Kansas City.—V. M. Barnett, G. F. Berry, T. F. Byrne, C. H. Carlisle, W. E. Carpenter, C. N. Dearth, J. C. Howe, O. F. Jones, W. E. Keyes, W. J. Lyons, T. J. Radford, G. W. Reeves, C. L. Richmond, J. D. Schenick, H. J. Walruff, D. Whitmeyer, D. V. Whitney, C. E. Zinn.
La Due.—S. H. Jones.
La Mar.—A. W. Tullock.
Lathrop.—C. C. Hamilton.
Meadville.—L. H. Rogers.
Rich Hill.—J. H. B. Adams.
Richmond.—J. A. Wilson.
Spickardsville.—R. B. Cush.
St. Cloud.—N. J. Young.
St. Louis.—H. Ralty, G. H. Speck, G. H. Thomas.
Trenton.—H. B. McGregor.

The next meeting of the Board will be at Jefferson City, July 7th.

Canada.—The fee of one dollar for renewal of the license to carry on the business of a chemist or druggist in the Province of Ontario becomes due on the first of May, and is payable to Geo. Hodgetts, 305 Yonge street, Ontario.

Kentucky.—The incorporators of the new "School of Pharmacy for Women," of Louisville, are: J. P. Boyce, T. W. Dudey, E. T. Perkins, E. A. Grant, P. W. Edwards, Charles Godshaw, Robert Cochran, A. H. Cochran, S. L. Avery, W. N. Haldeman, and N. Finzer.

New Jersey.—A meeting of the Hudson County (N. J.) Pharmaceutical Association was held in Jersey City, on Friday, April 18th, at 3 P.M.

Mississippi.—An exhibition of articles of interest to pharmacists will be held in connection with the first annual meeting of the State Pharmaceutical Association to be held on the 20th of May. Communications in relation to it should be addressed to the Secretary, Mr. H. F. West, Lafayette, Miss.

Cod-liver Oil adulterated with Vaseline is mentioned by the *Pharmaceutische Zeitung*, which says that saponification of the oil will leave the paraffin unchanged.

The Population of Japan.—According to the latest statistics, the population of Japan amounts to 36,700,118 inhabitants, subdivided as follows:

The Imperial family	5
Families of princes royal	34
Nobles	3,204
Ancient Samourai or chiefs clans	1,931,824
Common people	34,665,051

There is a priest to each 382 inhabitants. On the 31st of December, 1881, the number of priests was 94,126.

PHARMACEUTICAL CALENDAR.—APRIL.

Additions to and Corrections of the following Calendar are solicited.

Date.	Society Meetings.
Thurs. 1st.	Louisville (Ky.) Coll. of Pharm.
Fri. 3d.	American Chemical Soc.—New York, University Building, 8 P.M.
	Cleveland (Ohio) Pharm. Assoc.—Annual M.
Mon. 5th.	Erie Co. (N. Y.) Pharm. Assoc.—Buffalo.
Tues. 6th.	Kings Co. (N. Y.) Pharm. Soc.—B'klyn.
	Maryland Coll. Pharm.—Baltimore.
	St. Joseph (Mo.) Pharm. Assoc.
Wed. 7th.	Indianapolis (Ind.) Assoc. of Pharmacists.
Thurs. 8th.	Lancaster Co. (Pa.) Pharm. Assoc.
	Maryland Coll. of Pharm.—Baltimore.
	Maryland Pharm. Assoc.—An. M., Baltimore.
	Newark (N. J.) Pharm. Assoc.
	N. Y. German Apoth. Soc.
	Philadelphia (Pa.) Coll. of Pharm.—Alum. and Pharm. Meet.
Mon. 12th.	Maryland Pharm. Assoc.—At Baltimore. (J. W. Geiger, Local Sec.)
Tues. 13th.	Alabama Pharm. Assoc.—Annual Meeting, Montg'y. (M. M. Stone, of Selma, Loc. Sec.)
	Massachusetts Coll. of Pharm.—Boston.
	National Coll. of Pharm.—Washington.
	Indiana Pharm. Assoc.—An. M., Evansville. (W. L. Johnson, Local Sec.)
	Missouri Pharm. Assoc.—At Brownsville. (C. M. Kelly, Local Sec.)

Date.	Society Meetings.
Tues. 13th.	Texas Pharm. Assoc.—At Waco. (W. B. Morrison, Local Sec.)
Wed. 14th.	Cincinnati (Ohio) Coll. of Pharm.
	New York Board of Pharm.
	Nebraska Pharm. Assoc.—Annual Meeting, Omaha.
Mon. 19th.	Louisiana Pharm. Assoc.—Annual Mt., Baton Rouge. (B. Lewis, Local Sec.)
Tues. 20th.	Mississippi Pharm. Assoc.—Annual Meeting, Aberdeen. (H. F. West, of Fayette, Sec.)
	Philadelphia (Pa.) Coll. of Pharm.—Ph. Meet.
	St. Joseph (Mo.) Pharm. Assoc.
	St. Louis Coll. Pharm.—Trust. & Alum. Meet.
	Virginia Pharm. Assoc.—Annual Meet., at Lynchburg. (W. J. Martin, Local Sec.)
Wed. 21st.	Ohio Pharm. Assoc.—An. Mt., Cincinnati.
	New Jersey Pharm. Assoc.—An. Mt., Asbury Park. (W. C. Bakes, Local Sec.)
Tues. 27th.	Boston (Mass.) Druggists' Assoc.
	Kentucky Pharm. Assoc.—Annual Meeting, Louisville. (A. J. Elwang, Local Sec.)
	Iowa Pharm. Assoc.—An. M., Marshalltown. (C. J. Lander, Socal Sec.)
Thurs. 29th.	Kings Co. Board of Pharm.—Brooklyn.

Azor Thurston